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Private Timberland Owners of Michigan, 1994

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INTRODUCTION

There are 36.4 million acres of land in Michigan, and about half (19.3 million acres) are forested. The vast majority—97 percent or 18.6 million acres—of Michigan's forest land is classified as timberland. The term timberland refers to forest land that is producing or capable of producing industrial wood crops and is not excluded from timber harvest. The remaining 3 percent of Michigan's forest land is classified as reserved forest land (575,000 acres) or other forest land (90,000 acres). On reserved forest land, timber harvesting is administratively prohibited, and on other forest land, sites are of very low productivity. (See Appendix for complete definition of terms used in this bulletin.)

Michigan's timberland plays an important role in sustaining the forest products, outdoor recreation, and tourism industries, and in shaping the ecological character of the environment. The public, through various governmental agencies, owns about a third (6.6 million acres) of Michigan's timberland (table 1). The remaining 12 million acres of timberland is held by private owners, primarily individuals or family groups, but also partnerships, trusts, and corporations of varying sizes. Private timberland owners, holders of about one-third of all the land in Michigan, are demographically or organizationally diverse. They hold timberland for different reasons, and their motives vary in deciding how to use the land. Some are long-term owners and others only recently acquired timberland. Their holdings range from a few acres to thousands of acres of timberland.

This bulletin reports findings from a 1994 survey of Michigan private timberland owners. The objectives of the survey were: (1) to identify and profile private timberland owners; (2) to ascertain their objectives and motives for owning timberland, including benefits received from owning timberland and expected benefits; (3) to determine their timber harvest activities, including why they harvest or do not harvest, and their timber harvest plans; (4) to determine their knowledge and use of professional forestry management assistance; and (5) to ascertain their view toward public access to their land.

The findings presented here have been statistically expanded from a sample to estimate the total population of private owners and the timberland they own. Readers are advised to read the definition of terms and the discussion of the study methods and sampling errors in the appendix.

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Thomas W. Birch, Forester, received bachelor's and master's degrees in forestry from Michigan State University. He joined the Forest Service in 1974 and is currently with the Forest Inventory and Analysis Unit at the Northeastern Forest Experiment Station in Radnor, Pennsylvania.

In 1981, Carpenter and Hansen (1985) surveyed a sample of Michigan nonindustrial timberland owners. Their survey procedures were similar to those we used and some of their findings can be compared to those from this survey. Further, information presented here complements published reports containing detailed information about the extent of timberland, the amount of wood fiber present, its physical condition, and the growth and removal rates associated with the resource (Leatherberry and Spencer 1996, Schmidt *et al.* 1997).

AN OVERVIEW OF MICHIGAN'S PRIVATE TIMBERLAND RESOURCE

Michigan is divided into four Forest Survey Units along county boundaries (fig. 1). Two units are in the Upper Peninsula and two are in the Lower Peninsula. Each unit represents relatively homogeneous areas based on topography and other physiographic considerations as well as the industrial/economic character of the region.

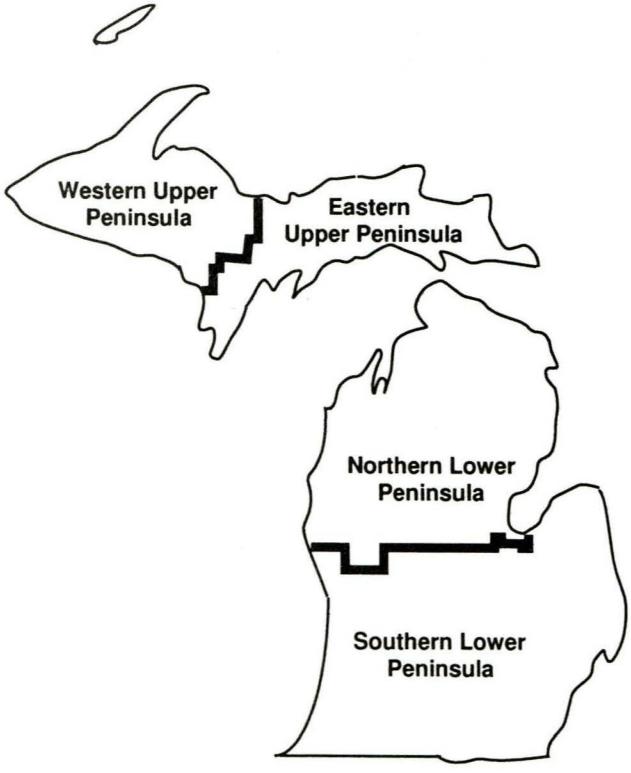

Figure 1.—*Forest Survey Units of Michigan, 1994.*

The Upper Peninsula—the Eastern Upper Peninsula (Eastern UP) and the Western Upper Peninsula (Western UP) Units—is predominantly rural in character; few towns there have populations of more than 10,000 people. The region contains only 29 percent of the State's land area, but 42 percent of the private timberland. Many of the State's primary wood-using mills are located there. In the Eastern UP Unit, there are an estimated 2,074,600 acres of private timberland. Private owners hold 54 percent of the Eastern UP's timberland. The maple-beech-birch and the spruce-fir groups are the dominant forest type groups each occupying about a third of the Eastern UP's timberland area. Sawtimber stands predominate, occupying 41 percent of the unit's timberland area. The Western UP Unit contains 25 percent of the State's timberland area with about two-thirds (3,002,200 acres) held by private owners. The predominant timber type in the Western UP is maple-beech-birch. Approximately half of the unit's timberland is in sawtimber-size stands.

The Lower Peninsula has extensive agricultural and urban/industrial development. However, the region contains nearly 7 million acres of privately owned timberland. In the Northern Lower Peninsula (Northern LP) Unit, there are 4,299,700 acres of private timberland. Maple-beech-birch and aspen are the major hardwood forest types, occupying 29 percent and 20 percent, of the Northern LP Unit's timberland area, respectively. Red, jack, and white pines are the dominant softwood forest types, together occupying about 17 percent of the unit's timberland area. Approximately 40 percent of the timberland in the Northern LP Unit supports sawtimber-size stands. In 1990, nearly half of Michigan's saw-log production was harvested there. The Southern Lower Peninsula (Southern LP) Unit has 2,662,900 acres of private timberland, where maple-beech-birch and oak-hickory are the dominant forest types. Approximately 57 percent of the timberland in this unit supports sawtimber-size stands. See Leatherberry and Spencer (1996) and Schmidt *et al.* (1997) for a more detailed discussion of Michigan's forest resources.

PRIVATE TIMBERLAND OWNERS

Number of Private Timberland Ownership Units

In 1994, an estimated 353,135 private ownership units held 12,039,400 acres of timberland in Michigan. In their 1981 study, Carpenter and Hansen (1985) estimated that 384,700 nonindustrial private owners held 8,798,400 acres of timberland. The 1994 estimate has a sampling error of 7.6 percent, or ± 28,251. This means that if the study were repeated, two out of three times the resulting estimate of the number of owners would be between 324,884 and 381,386. The 1981 estimate has a sampling error of ± 7 percent (± 26,929), meaning that if the study were repeated, two out of three times the resulting estimate would be between 357,771 and 411,629. Because the sampling error ranges of both estimates overlap, the two estimates are considered to be statistically valid estimates of the population of private timberland owners in Michigan.

The most recent estimates include industrial timberland owners. However that estimate may be lower than Carpenter and Hansen (1985) because, if one study, by chance, sampled a smaller proportion of ownerships in the smallest size class, it is conceivable that the number of the smallest ownerships would be underestimated. Indeed this may well have been the case. The average estimated size of ownerships in the 1- to 9-acre size class in the 1994 study was 4.2 acres (table 2), but in 1981 it was 3.2 acres (Carpenter and Hansen 1985). In two similar studies using the same estimation technique in Southern New England (Kingsley 1976) and in New Hampshire (Birch 1989), the average size in the 1- to 9-acre class was 3.5 and 3.2 acres, respectively. We have concluded that although Carpenter and Hansen's (1985) estimate and our estimate are not statistically different, our sample appears to have underestimated the 1- to 9-acre class.

Size of Private Timberland Holdings

The average size of timberland holding varies substantially throughout Michigan. Generally, the larger holdings are found in the Upper Peninsula and the smaller ones are found in the Lower Peninsula, especially in the Southern LP Unit as shown in the next column:

Unit	Average size of holding (acres)
Eastern Upper Peninsula	63.1
Western Upper Peninsula	118.7
Northern Lower Peninsula	32.0
Southern Lower Peninsula	16.6
State average	34.1

In Michigan, there are a large number of small-tract private timberland owners, and correspondingly, a relatively small number of large-tract owners (table 2, fig. 2). Nearly half (46 percent) of the owners hold less than 10 acres of timberland, accounting for 6 percent of the private timberland acreage. While, small-tract owners predominate, a significant proportion of private timberland is controlled by owners of large holdings. To illustrate, on average, each owner holds 34 acres; however, if owners holding fewer than 10 acres are excluded, the average size of holding rises to 59 acres. Furthermore, a few owners—less than 1 percent— hold about one-fifth of all private timberland in Michigan. Those owners, mostly forest industries, each hold timberland totaling more than 5,000 acres.

Notwithstanding the spatial variability in size of holding, nearly half of all private timberland is held by owners who have fewer than 100

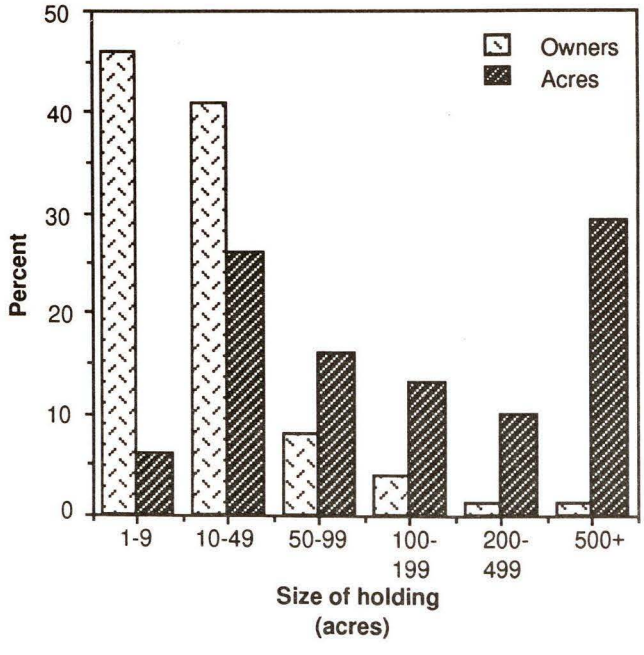

Figure 2.—*Distribution of private owners by size of holding, Michigan, 1994.*

acres. It is this half of the timberland resource where concern about fragmentation and rapid turnover is concentrated, but fragmentation may not be a major problem. For example, the distribution statewide by size class of ownership changed only slightly between surveys as shown below:

Size of ownership	Year of survey	
	1981	1994
(acres)	(percent of owners)	
1-9	54	46
10-49	36	41
50-99	6	8
100+	4	5
Total	100	100

Also, the proportion of private owners with fewer than 100 acres of timberland each did not change very much. However, a notable exception was the decrease in the 1- to 9-acre class from 54 to 46 percent of the private timberland owners. In 1981, owners with timberland in the 1- to 9-acre class controlled 663 thousand acres, and in 1994 they held 669 thousand acres. With proportionally fewer owners holding about the same amount of land, the average size of holding increased. Carpenter and Hansen (1985) reported that owners holding fewer than 100 acres in 1981 owned an average of 14.2 acres. In 1994, the average size of holdings for owners of fewer than 100 acres was 17.6 acres.

Tenure Patterns Among Timberland Owners

Timberland, like other commodities or assets, may change owners. However, owners of timberland in Michigan are generally long-term owners; an estimated 61 percent of them acquired timberland before 1980 as shown in the tabulation below:

Land tenure pattern and activity	Percent of owners		Percent of acres	
Acquired after 1980	33		25	
Acquired before 1980	61		64	
Increased holding		16		19
Decreased holding		11		17
Both increased & decreased holding		5		11
No change in holding		68		53
No answer	6		11	
Total	100	100	100	100

Land tenure patterns among owners who acquired timberland before 1980 suggest that timberland fragmentation or parcelization is not a pervasive problem in Michigan. As shown in the previous column, many owners who acquired timberland before 1980 have simply held their land in tact, but some occasionally increased or decreased their holdings.

Number of Tracts Owned

Most owners hold timberland in a single contiguous tract. However, single tract owners hold less than half (46 percent) of the State's private timberland acreage (table 3, fig. 3). Sixteen percent of the owners hold timberland acreage in two tracts, accounting for 16 percent of the private timberland. Only 8 percent of the owners hold timberland in three or more tracts, but they own 38 percent of the State's private timberland acreage.

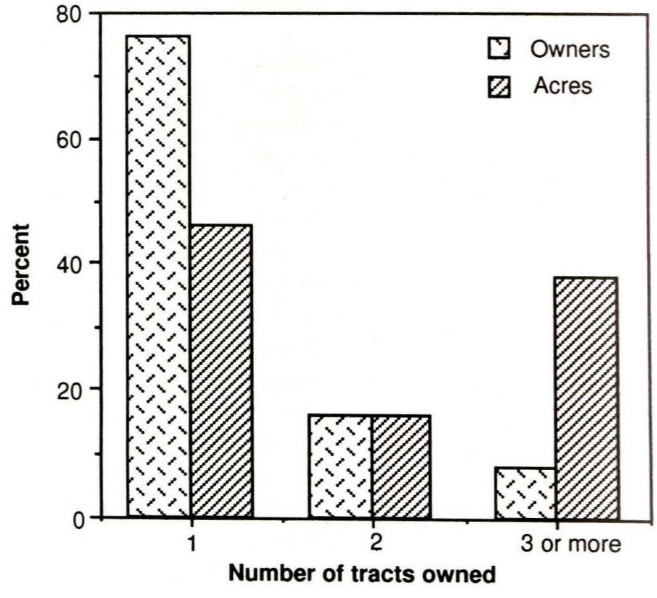

Figure 3.—*Distribution of private ownership units by number of tracts owned, Michigan, 1994.*

The percentage of owners holding one tract of timberland is fairly evenly distributed across units at around 75 percent. However, in terms of acreage of timberland held in multiple tracts, the units differ considerably. In the two Upper Peninsula units, more than two-thirds of the timberland acreage is held by multiple tract owners. In contrast, in the Northern LP Unit, slightly less than half the

timberland acreage is held by owners of multiple tracts, and in the Southern LP Unit the percentage is even lower—37 percent.

Distance of Timberland From Residence

About two-thirds of the owners, holding 47 percent of the timberland are resident owners—their nearest tract of timberland is within a mile of their primary residence or place of business (table 4). Ten percent of the owners hold timberland located between 2 and 25 miles of their residence or business. An additional 19 percent of the owners hold timberland that is located more than 25 miles from their residence or business. Their holdings account for about a fourth of the private timberland in the State. Four percent of the owners holding 9 percent of the timberland did not answer the question about the location of their timberland. In general, Michigan has a substantial number of timberland owners who do not reside on or near the timberland they own. Thirteen percent of the owners, controlling about 2 million acres, reside more than 100 miles from their timberland holdings.

There are regional differences in where owners reside and where their nearest tract of timberland is located. In the Southern LP Unit, 81 percent of the owners are resident owners, holding 75 percent of the timberland acreage in the unit (table 4). Only 5 percent of the Southern LP owners hold timberland that is more than 25 miles from their primary residence or business. In the Northern LP Unit, 60 percent of the owners are resident owners, holding 46 percent of the private timberland in the unit. However, one-fifth of the owners reside more than 100 miles from the timberland they own. These nonresident owners hold 26 percent of the private timberland acreage in the Northern LP Unit. In the Upper Peninsula, there are proportionally fewer resident owners than in the Lower Peninsula. Nearly a third of the owners in the Western UP and Eastern UP Units, hold timberland that is more than 100 miles from their primary residence or place of business.

The relation between distance from residence or place of business and location of timberland is clear for one-tract owners. However, for owners who own more than one tract of timberland, the relation is not clearly defined or discernible (table 5). Sixty-six percent of the multiple-tract owners are resident owners, and while they hold 44 percent of the acreage, the location of their other holdings is not clearly defined. For example, some multiple-tract owners viewed their farthest tract as being less than a mile from their residence. Those owners probably lived on a tract of land and had other tracts nearby.

Forms of Ownership

In Michigan, 95 percent (334,658) of the holders of timberland are individuals, that is single persons, or two or more individuals, such as husband and wife, or others, not including family corporations. Individual owners control 72 percent (8,688,158 acres) of the State's privately owned timberland (table 6). Corporations account for only 1 percent of the owners, but collectively control 16 percent (1,980,538 acres) of the State's timberland. Three percent of the ownership units are partnerships, owning 8 percent (995,497 acres) of the timberland acreage. One percent of the owners are clubs or associations that hold about 3 percent (310,444 acres) of the private timberland.

The average size of holding differs significantly among the forms of ownership, as shown below:

Form of ownership	Average size of holding (acres)
Individual	26.0
Partnership	106.3
Corporation	554.0
Club/assoc.	59.4
Other	206.9

The form of ownership in which timberland is held varies substantially throughout the State (table 6). In the Lower Peninsula, 8 of every 10 acres of privately owned timberland is held by individual owners. Timberland held by clubs or associations, is most likely to be in the Northern LP Unit where more than 209,000 acres, or about two-thirds of all club- and association-owned timberland, is located. In the Upper Peninsula, the acreage held by different types of owners is more varied, with substantial acreage held by corporations. For instance, the Western UP Unit, which has 25 percent of the privately owned timberland,

contains 55 percent of the State's timberland owned by corporations. Also, timberland held by partnerships is more likely to be located in the Upper Peninsula.

Twenty-six percent (93,526 owners) of the ownership units are part of an active farm (table 7). These farm ownerships hold 2,074,092 acres, or 17 percent of the privately owned timberland in Michigan, and virtually all farm ownerships are held by individuals. The 9,965,308 acres of timberland not in farm ownerships are held in 259,609 ownerships, and 94 percent of them are individual ownerships. Farmers' timberland holdings averaged 22 acres in size, while the nonfarmer holdings averaged 38 acres. Since 1981, the average size of farmer-owned timberland has remained at 22 acres.

Selected Characteristics of Individual Timberland Owners

Individual timberland owners are employed in a variety of occupations. The most distinguishing factor among owners is that nearly one-third of them are retired, and as a group they hold nearly one-fourth of the privately owned timberland (table 8). Retired owners hold timberland in all regions of the State, but most of them—75 percent—hold timberland in the Lower Peninsula, especially in the Northern LP Unit where 41 percent of the owners are retired and hold an estimated 1,363,572 acres, or 32 percent of the unit's timberland. Although there are more retired timberland owners in the Lower Peninsula, a substantial proportion of the owners of private timberland in the Upper Peninsula are retired. Close to half of the owners in the Eastern UP and Western UP Units are retired, and they hold about 19 percent (951,156 acres) of the region's privately owned timberland. The number of retired timberland owners in Michigan increased between 1981 and 1994, going from an estimated 73,950 owners to an estimated 112,874 owners.

Figure 4 shows the distribution of individual owners by occupation and the average size of timberland holding. Retired persons hold an average of 27 acres of timberland. Retirees make up 34 percent of the individual owners and hold 34 percent of the individually owned timberland (or 25 percent of all privately owned timberland). Farmers hold an estimated 683,971 acres or an average of 24 acres for each farmer-owned unit. Farmers make up only 8 percent of the individual owners and own 8 percent of the individually owned timberland (or 5 percent of all privately owned timberland).

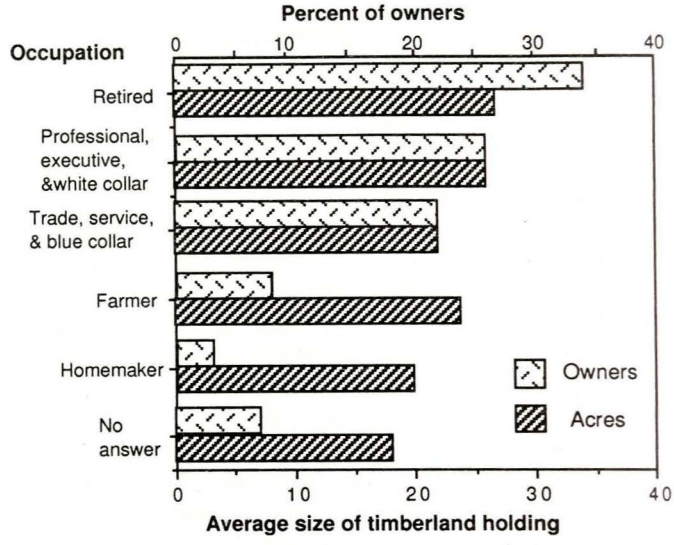

Figure 4.—*Distribution of individual owners by occupation and average size of timberland holding, Michigan, 1994.*

With a large share of the individual timberland owners retired, it follows that timberland owners would be older than the general population. Among timberland owners, 76 percent are 45 years or older, including slightly more than one-third who are 65 years or older (table 9). This differs from the State's general population, where only 31 percent of the people are 45 years or older and only 12 percent are 65 years or older. Timberland owners in the Southern LP Unit tend to be younger than those in the other units. Twenty-eight percent of the timberland owners in the Southern LP Unit are under 45 years of age, compared to only 16 percent of the owners in the other three units. Statewide, about three-fourths of the individually owned timberland is held by someone over 45 years old. It does not appear that age of the owner is related to amount of timberland owned.

Among the various individual owners, farmers as a group tend to be older. Forty-eight percent of the farmers who own timberland are 65 years of age or older, with 71 percent reporting

their age as 55 years or older. Females who identified themselves as housewives are generally older than other owners. Almost 70 percent of the women who own timberland are 65 years or older. On the other hand, white-collar and blue-collar workers who own timberland are mostly under the age of 55, with 60 and 65 percent of each group, respectively, reporting their age as under 55 years. Although there are differences in the ages of owners based on occupation status or background, on average, individual timberland owners in Michigan are getting older. In 1981, 65 percent of the individual owners were 45 years or older. By 1994, the proportion of individual owners older than 45 years had increased to 76 percent.

Michigan's individual timberland owners, on average, have higher household incomes than other Michigan residents. Thirteen percent of the timberland owners reported household incomes of $75,000 or more, compared to 9 percent of the general population. Nineteen percent of the owners reported an annual household income of $60,000 or more, and they hold 24 percent of the timberland area (table 10). About one-fifth of all individual owners did not answer the household income question.

Selected Characteristics of Corporate and Other Timberland Owners

Five percent (18,477 owners) of the owners holding timberland in Michigan are either corporations, partnerships, or clubs and associations (table 11). Combined, these groups hold an estimated 3,351,242 acres of timberland (table 12). An estimated 3,574 ownership units are corporations, owning 16 percent (1,980,538 acres) of the private timberland. Corporate owners generally hold larger tracts of timberland. On average each corporate owner holds 554 acres. Corporate-owned timberland is concentrated in the Upper Peninsula; the Western UP Unit alone contains more than half of the State's corporate-owned timberland. An estimated 9,366 partnerships hold about one million acres of timberland, nearly all of it located in the two Upper Peninsula units and in the Northern LP Unit. An estimated 5,224 owners are organized as clubs or associations, and they hold an estimated 310,444 acres of timberland. Club- and association-owned timberland is concentrated in the Northern LP Unit where approximately two-thirds (209,062 acres) of the timberland owned by these groups is located.

Corporations and other group owners of timberland are involved in a variety of businesses or other pursuits. Forest industries hold 1,247,656 acres of timberland in Michigan (table 12). Some of the other firms hold and manage timberland primarily for timber production but do not own primary wood-using mills. We classed these firms as land investment companies, and they hold 637,087 acres of timberland in Michigan. Timberland owned by forest industries and land investment companies is concentrated in the Western UP Unit. Owners who hold timberland for sport and recreation own 598,699 acres. Most of the land is owned by clubs or associations that range from organized memberships to informal groups who gather for hunting, fishing, or other recreational activities. Partnerships and corporations also hold substantial timberland for sport or recreation (table 12).

Tenure Among Ownership Groups

One-third of the private timberland owners acquired their land after 1980, and their holdings account for one-fourth (3,133,108 acres) of all private timberland in Michigan (table 13). Seven percent of the owners obtained their timberland between 1990 and 1994. These newer owners hold 8 percent (924,391 acres) of the private timberland. In terms of long-term tenure, 13 percent of the owners have held more than one-fourth (27 percent) of the State's private timberland for more than 30 years.

There are differences in tenure between corporate and individual owners (table 13). Thirty-seven percent of the corporate and group ownership acreage has been held longer than 34 years, compared to 23 percent of the individual-owned acreage. Twenty-six percent of the timberland held by corporate or other groups was obtained before 1940. However, 19 percent of the corporate and other group owners did not tell us when they had acquired timberland. These data represent a maximum tenure, in that some owners may have obtained additional tracts subsequent to their initial acquisition.

Among the non-forest industry ownerships, there are slight regional differences in when timberland was acquired (table 14). In the Eastern UP and Southern LP Units, about two-thirds of the timberland that is not forest industry land was acquired after 1979. In the Western UP and Northern LP Units, about half the timberland that is not forest industry land was acquired after 1979. Long-term owners of non-forest industry land (land acquired before 1940) are more numerous in the Western UP Unit, where 13 percent of the owners hold 21 percent of the non-forest industry timberland acquired before 1940.

OWNER OBJECTIVES AND MOTIVES

Reasons for Owning Timberland

Forty percent of the private timberland owners in Michigan hold timberland primarily for recreation (24 percent) and esthetic enjoyment (16 percent) (table 15, fig. 5). Owners who hold timberland primarily for these reasons control 4,837,679 acres, or 40 percent of the private timberland in Michigan. Only 1 percent of the owners indicated that timber production was their primary reason for owning timberland. Although few in number, owners holding land primarily for this reason control 21 percent of the private timberland acreage in Michigan. One-third of the owners indicated they owned timberland primarily because it is a part of a residence or farm. These owners hold an estimated 1,972,550 acres, or 16 percent of the private timberland acreage.

In the Western UP Unit, where much of the corporate-owned timberland is located, 58 percent of the acreage is held primarily for timber production (table 16). In the Southern LP Unit, where farmers predominate, less than 1 percent of the private timberland acreage is owned primarily for timber production. In this unit, considerable timberland acreage (44 percent) is owned because it is associated with farming or is part of the owner's residence. Much of this timberland is in so-called "back forties,"—land too steep or too wet for row crop farming. Such wooded land provides farmers with a ready source of wood for fence posts, firewood, and building material. In the Northern LP Unit, more than 56 percent of the timberland is owned primarily for recreation or esthetic enjoyment (table 16). Coincidentally, 34 percent of the timberland acreage in the Northern LP Unit is held by owners who live more than 50 miles away. Many of these "nonresident" owners live in southern Michigan's metropolitan areas, and maintain second homes on their timberland or use the land for hunting and other recreational activities.

Primary Benefits Received From Owning Timberland

Sixty-one percent of the owners indicated that recreation or esthetic enjoyment was the primary benefit they received in the last 10 years from owning timberland (fig. 6). Only 2 percent of the owners ranked timber income as the primary benefit of ownership. Yet, owners of about one-fourth of all the private timberland received income from the sale of timber.

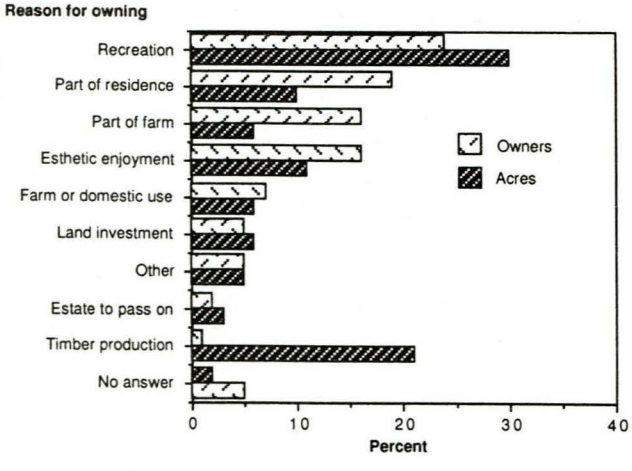

Figure 5.—*Primary reason for owning timberland, Michigan, 1994.*

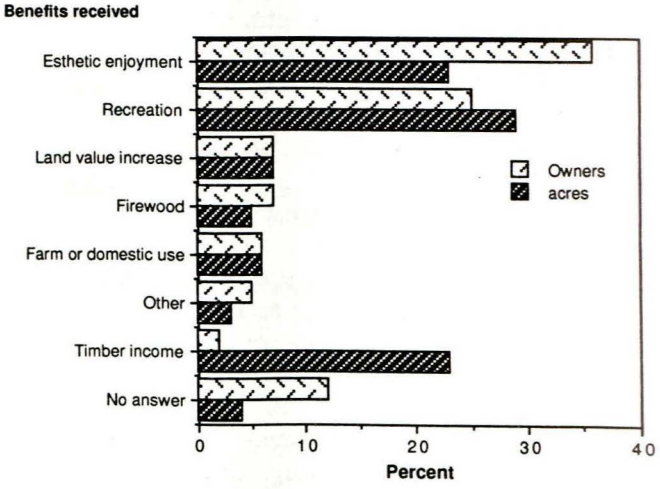

Figure 6.—*Primary benefits received in last 10 years from owning timberland, Michigan, 1994.*

Primary Benefits Expected From Owning Timberland

Michigan timberland owners expect to receive benefits in the future similar to those they received from their land in the past. Recreation and esthetic enjoyment are important expected benefits; timber income ranks low. Obviously, most owners feel timberland has intrinsic value as recreation and esthetic resources. Land value increase also is expected to be an important benefit. Fourteen percent of the owners, holding 10 percent of the timberland, expect land value increase to be the primary benefit of owning timberland in the next 10 years.

OWNER TIMBER HARVEST ACTIVITIES

Harvest History

Nearly half the owners (48 percent or 169,772 owners) have harvested timber from their land. The acreage they own—8,810,158 acres—accounts for 73 percent of the State's privately owned timberland. Among the owners who harvested timber, 96 percent are individual owners, holding 66 percent of the acreage harvested (table 17). Corporations and partnerships account for only 3 percent of the owners that harvested timber from their land, but they hold 30 percent of the acreage that was harvested in Michigan.

Timber harvesters are employed in various occupations, but retired owners predominate (table 18). Most owners (72 percent) who harvested timber from their land have done so since 1990 (table 19). Nearly all harvesters had harvested timber within the past two decades, or since 1970. These owners hold an estimated 8,416,678 acres. Among individual owners, older owners tend to be the most active harvesters, as shown in the tabulation below:

Age of harvesters (years)	Percent of harvesters
Under 34	5
35-44	19
45-54	16
55-64	18
65+	36
No answer	2
No age reported	4
Total	100

Reasons for Harvesting Timber

Twenty-eight percent of the harvesters said they harvested timber for their own use (table 20). Much of this was for firewood; 15 percent of the harvesters had mentioned that firewood was the primary benefit they received from owning timberland. Twenty-four percent of the owners harvested because they believed the timber was mature. These owners hold 2,152,382 acres—24 percent of the timberland owned by harvesters. Five percent of the harvesters removed timber during cultural treatments. Owners of more than a million acres of timberland harvested timber as part of cultural treatments. An additional 5 percent of harvesters removed timber during timber salvage operations. Although most Michigan private timberland owners ranked recreation or esthetic enjoyment as a primary benefit of owning timberland, few of them (1 percent) harvested timber to improve recreation or esthetic values. Twenty-three percent of the harvesters did not give a reason for cutting timber from their land.

The reasons owners say they harvest timber vary across the State (table 20). For example, 8 percent (13,902 owners) of the harvesters, owning 3 percent of the timberland that was harvested, indicated that land clearing was the reason they harvested timber. However, land clearing was confined almost exclusively to the Southern LP Unit, where owners of nearly 12,000 acres reported land being cleared. Seventy percent of the harvesters who conducted timber salvage harvesting had timberland in the Northern LP Unit. Timber salvage harvesting was performed by owners who control 209,015 acres of timberland in this unit. Also, most of the harvesting for wildlife habitat improvement was done in the Northern LP Unit. Owners of an estimated 289,327 acres of timberland in the Northern LP Unit harvested timber for wildlife habitat improvement, accounting for about 80 percent of acreage held by owners in this group.

The reasons owners harvest timber also vary among the different ownership groups (table 21). As expected, forest industry owners are more likely to harvest as part of cultural treatments than are other groups of owners, and more of their harvest is for their own use. Also, few acres of land owned by forest industry are harvested because the timber is ma-

ture, suggesting that industry applies a rotational management system that harvests timber at the optimal time. On the other hand, farmer and individual owners of timberland hold substantial acreage on which timber was harvested because it was mature. Mature stands run the risk of decay or other damage and may decline in economic value over time. Also, farmers and other individual owners may do single tree harvesting of high value hardwoods as the trees reach maturity.

Corporate owners (excluding forest industries) are less likely than other owners to harvest timber for their own use. But, they appear to harvest in response to market conditions. Thirty-six percent of acreage harvested by corporate owners was harvested because the owner believed the market price was fair.

Products Harvested

In 1992, the harvest of growing-stock trees in Michigan amounted to 360,477,000 cubic feet (Leatherberry and Spencer 1996). That same year, Michigan primary wood-using mills processed 329,200,000 cubic feet of industrial wood (May and Pilon 1995). Land owned by forest industries supplies much of the industrial wood in the form of saw logs and pulpwood (table 22). However, Michigan's forest industry also relies on nonindustrial timberland owners to supply wood for their mills. Fuelwood is the product removed by most harvesters, followed by saw logs, wood for personal use, and pulpwood (fig. 7). The high percentage of individual owners, many owning ess than 500 acres, who are fuelwood cutters emphasizes a reliance on wood as a heating source. However, fuelwood harvesting probably does not adversely impact the availability of privately owned timberland as a source of raw material for primary wood-using mills. Smith and Weatherspoon (1990) reported that growing-stock trees in Michigan were not the major source of fuelwood; 48 percent of the fuelwood that was cut came from non-growing-stock trees. Corporate and other groups are active saw-log and pulpwood harvesters, especially on the larger properties; the proportion of individual owners harvesting saw logs and pulpwood increases as acres owned increases. Although fuelwood harvesting is probably an annual activity for many individual owners, harvesting for other products is probably done only when timber matures or during cultural treatments, and therefore occurs less often, especially for owners with less than 50 acres of timberland.

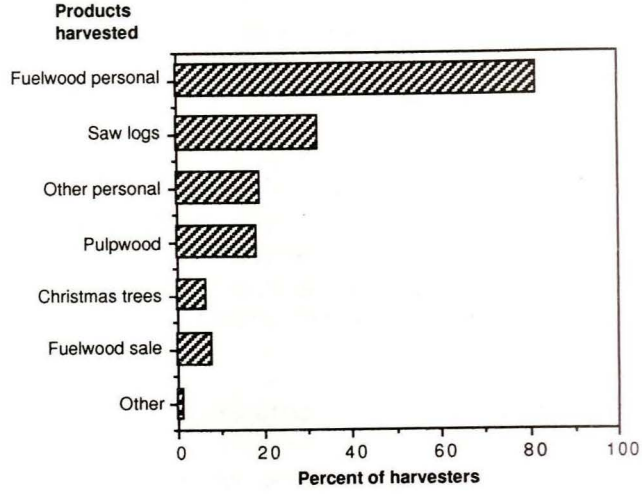

Figure 7.—*Distribution of harvesters by products harvested, Michigan, 1994.*

Reasons for Not Harvesting Timber

Fifty-two percent of the private timberland owners in Michigan have never harvested timber from their land. Those owners hold 3,229,242 acres, or 27 percent of the privately owned timberland in Michigan. This does not mean timber on the land has never been harvested, but simply that there has been no harvest during the tenure of the current owner. Timber is not harvested for a variety of reasons. In our survey, the single reason most often given for not harvesting timber is that the timberland did not contain enough volume of wood to warrant harvesting (table 23). Twenty percent of the owners who did not harvest timber thought the volume of wood was too low. Virtually all the owners who did not harvest because of low volume had timberland in the Lower Peninsula—152,371 acres. Another 4 percent of those who did not harvest thought the trees were too small. Most of these owners hold timberland in the Southern LP Unit. Factors associated with tree volume or size were cited by owners who control 12 percent (380,525 acres) of Michigan's unharvested acreage. Some owners who cited volume or size as a factor in not harvesting may harvest in the future if trees increase in size to where the owners think harvesting is warranted, or if market conditions are favorable for harvesting.

Some owners indicated they did not harvest because they are opposed to harvesting. Fifteen percent of those who did not harvest, controlling 21 percent (692,339 acres) of the timberland acreage that was not harvested, are opposed to harvesting. Opposition to harvesting was fairly consistent in each unit; between 10 and 19 percent of the nonharvesters in each unit indicated they are opposed to harvesting. Over time, some of these owners may change their minds or may sell the land. However, there has been an increase in owners who are opposed to harvesting timber. We estimate that 28,108 owners were opposed to timber harvest in 1994, up from 11,100 owners who opposed timber harvesting in the 1981 study (Carpenter and Hansen 1985). An additional 12 percent of the timberland was not harvested because the owner thought that a harvest would reduce the beauty of the land.

Another significant reason for not harvesting is the belief that harvesting would destroy habitat needed by wildlife game species. Eight percent of the nonharvesters, holding 17 percent (560,275 acres) of the nonharvested acres, indicated they did not harvest timber because they did not want to destroy hunting. Nearly one-half (258,780) of the acreage in this category is in the Northern LP Unit (table 23).

Among the different groups of owners, individual owners tend to oppose harvesting more than others (table 24). In the 1994 study, individuals owning 521,626 acres were opposed to timber harvest. Also, the beliefs that harvesting would destroy hunting and reduce scenery are important reasons individual owners do not harvest, which parallel closely the reasons individuals have for owning timberland—recreation and esthetic enjoyment. Farmers, as a group, tend not to harvest because they think their land does not contain enough timber volume. Interestingly, farmer and individual owners holding nearly 100,000 acres did not harvest timber because they distrust loggers.

Harvest Plans

Thirty-eight percent of the owners intend to harvest timber in the next 10 years, and they hold 62 percent (7,511,011 acres) of the private timberland in Michigan (table 25, fig. 6). An additional 29 percent of the owners intend to harvest sometime in the future, but were not sure when the harvest would take place; they hold 23 percent (2,723,125 acres) of the private timberland. Altogether, owners who intend to harvest hold 85 percent of the private timberland acreage. Thirty percent of the owners never intend to harvest timber from their land. Owners who never intend to harvest timber hold only 13 percent (1,610,238 acres) of the State's private timberland acreage. Two percent of the private timberland is owned by owners who did not answer the question about harvest plans.

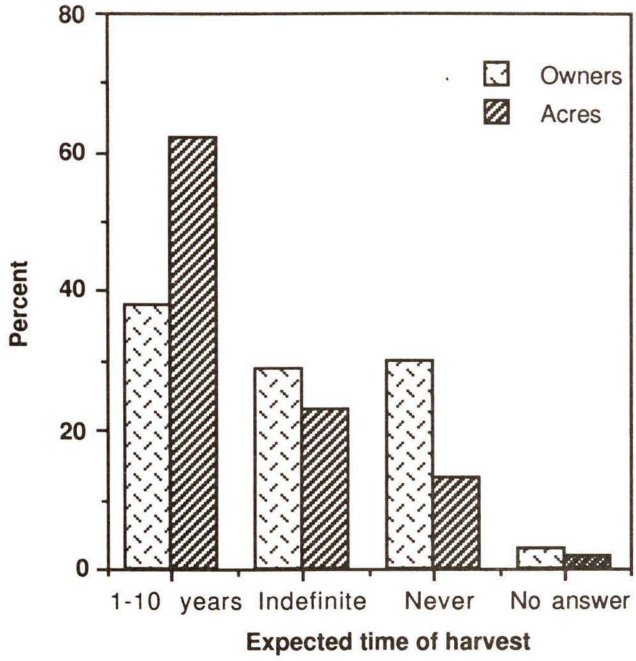

Figure 8.—*Distribution of owners and acres by intention to harvest, Michigan, 1994.*

On average, owners holding larger amounts of timberland expect to harvest more often than smaller ownerships (table 25). Sixty-four percent of the owners holding between 1 and 49 acres of timberland intend to harvest; this increases to 83 percent for the 50- to 499-acre size class and to 87 percent for owners holding more than 500 acres. As expected, forest industry intends to harvest timber from the 1,732,623 acres of land it owns.

The number of individual owners who plan to harvest timber increased between Michigan landowner studies. In 1981, Carpenter and Hansen (1985) estimated that 49 percent of the nonindustrial timberland owners, controlling 6,316,900 acres, intended to harvest

timber. By 1994, the percentage of individual owners planning to harvest timber had climbed to 67 percent, and these owners control an estimated 10,234,137 acres. On a percentage basis, the largest increase among owners who planned to harvest timber was with owners holding less than 50 acres of timberland. The percentage of individual owners in this category who planned to harvest increased from 46 to 64 percent between 1981 and 1994. The proportion of owners holding between 50 and 500 acres who indicated they planned to harvest timber increased from 76 to 83 percent. The proportion of owners with more than 500 acres who indicated they planned to harvest timber remained virtually the same from 1981 to 1994, at 87 and 88 percent of the owners, respectively.

Reason for owning timberland does not appear to influence when, or if, timber is harvested (table 26). Fifty-eight percent of the owners who planned to harvest timber in the next 10 years gave their primary reason for owning timberland as recreation/esthetic enjoyment.

An estimated 104,775 (30 percent) of the nonindustrial forest owners, controlling 1,610,239 acres, expect that they will never harvest timber from their land (table 27). Those in this category are mostly individual, nonfarm owners. Individual owners having no plans to harvest timber hold 1,207,656 acres of timberland.

Owners who never plan to harvest timber are from all occupational backgrounds, but retired owners hold the largest share of acreage (540,368 acres) where there are no plans to harvest (table 28). Although the number of retired owners has increased, the acreage on which they do not plan to harvest has not significantly increased. In 1981 (Carpenter and Hansen 1985), retirees owned an estimated 538,150 acres of timberland where timber harvest was not planned. Between the 1981 and 1994 studies, the retiree-owned acreage on which timber harvest is not planned increased by only an estimated 2,218 acres, up to 540,368 acres. The percentage of retired owners who indicated they would never harvest timber declined from 39 percent in 1981 to 29 percent in 1994. Many retired owners have fixed incomes—54 percent had incomes of less than $30,000 a year. Although they may not have definite expectations for harvesting timber, economic necessity may force some to harvest in the future. Further, what owners say they will do with their land and what they eventually do often differ. Stone (1970) observed in the Upper Peninsula that owners' stated interests in harvesting timber and their actual behavior as a group did not match. Much more harvesting was done on private timberland than owners' statements alone would suggest.

FORESTRY MANAGEMENT ASSISTANCE

Knowledge of Management Assistance Resources

Holders of forest industry land, as expected, are knowledgeable about the sources of information for forest management assistance (table 29). But, non-forest industry private owners are less informed—42 percent of the owners did not know where to get forestry help or advice. Owners of timberland who did not know where to get assistance hold 24 percent of the private timberland in Michigan. Another 10 percent of owners, holding 15 percent of the private timberland, did not answer the question. Apparently, the proportion of nonindustrial timberland owners in Michigan with knowledge about where to get forestry information or assistance has not increased significantly over the years. Carpenter and Hansen (1985) estimated that 49 percent of the owners did not know where to get management information or help, compared to 42 percent in our study. However, individual owners who do not know where to get information or assistance hold significantly fewer acres now (an estimated 978,000 acres less) than they did in 1981.

Generally, owners who would contact others for forestry assistance indicated they would seek assistance from public agencies. Only 3 percent of the owners controlling 8 percent (963,426 acres) of the private timberland indicated they would use a consulting forester (table 29). Those who would consult a nongovernment forester for assistance hold the larger tracts of timberland. Also, owners of the larger tracts of timberland have more knowledge about forestry information sources and are more likely to contact multiple sources for information and/or assistance.

Use of Management Assistance

Only an estimated 17 percent of the owners (58,278 ownerships) have ever requested forest management assistance, but they hold 41 percent of the private timberland (4,894,156 acres) (table 30). Carpenter and Hansen (1985) found even a lower percentage of Michigan private timberland owners who requested forest management assistance. They estimated that 10 percent of the individual owners (39,050 ownerships), holding 26 percent (2,475,500 acres) of the timberland, requested forestry assistance or advice. Thirty-one percent of the holders of forest industry land indicated they have requested forest management assistance (table 30). That statistic is probably misleading because most forest industry land is managed by staff foresters—they generally do not rely on outside assistance. Two-thirds of the individual owners who requested assistance own less than 50 acres of timberland. However, only 13 percent of all small owners have asked for assistance. On the other hand, 80 percent of the individual owners who hold 500 acres or more have requested assistance. In general, few small-tract timberland owners—those with less than 50 acres—rely on outside assistance to manage their timberland (fig. 9). The decision to not use outside assistance is probably related to the fact that many small owners do not intend to harvest. Also, the diseconomies associated with logging small tracts of timberland may preclude seeking management assistance.

The proportion of owners who sought management assistance did not differ significantly among the units (table 31). However, there is significantly more timberland acreage in the Western UP and Northern LP Units where owners sought management assistance. Furthermore, the average holding size of owners who sought assistance differed significantly by unit, ranging from 377 acres in the Western UP Unit to 26 acres in the Southern LP Unit.

Thirty-six percent of the owners who sought forestry assistance in the past would contact multiple sources; these owners have 2,133,725 acres (table 32). Another source was the Natural Resources Conservation Service, used by 15 percent of those who sought assistance. Consulting foresters and the extension service each accounted for 14 percent of those who sought assistance.

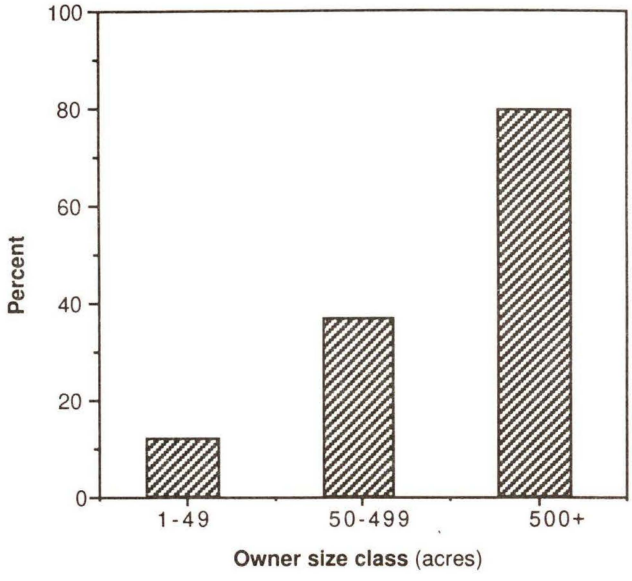

Figure 9.—*Percent of nonindustrial owners requesting forest management assistance by owner size class, Michigan, 1994.*

Most owners who received forestry assistance requested help related to "on the ground" forest management (table 33). The three most frequent types of assistance received were help with general forestry, information about forestry, and help with timber sales. Information about wildlife was also important. Owners requesting information about wildlife hold 1,761,627 acres.

COMPARING OWNERS WHO HARVEST TIMBER TO OWNERS WHO DO NOT HARVEST

Only 1 percent of the private timberland owners indicated that timber production is the primary reason they own timberland. However, owners holding timberland primarily for timber production control over 21 percent of all private timberland in Michigan. Most of the land that is held primarily for timber production is owned by corporations and located in the Upper Peninsula where size of holding has obvious implications for timber management. Also, many of the non-forest industry corporate owners are long-term owners who hold timberland as an investment. Time and economies of scale allow them to benefit from active timber management. Most individual and other non-corporate owners do not hold timberland for timber production; instead, recreation and esthetic enjoyment are the

primary reasons they own timberland. Although recreation or esthetic enjoyment is the primary reason for owning timberland, 44 percent of the owners who indicated those activities were important have harvested timber from their land (table 34). Owners who have harvested timber and those who have not maintain similar feelings about recreation; about a fourth of them hold timberland for that reason. Also, 18 percent of the harvesters and 17 percent of the nonharvesters indicated that esthetic enjoyment was the primary reason for owning timberland. Many owners who said they hold land primarily for recreation or esthetic enjoyment harvested timber because they realized that as timber matured its economic value would be lost if not harvested. It appears to us that the economic value of timber, especially in a stable or rising market, has a strong influence on the decision to harvest. In short, monetary gain and mature timber drive the decision to harvest. However, the predominance of smaller holdings, especially in the Lower Peninsula, may be an impediment to timber harvest. Many tracts of fewer than 50 acres are economically unattractive to log unless they are close to other areas that are to be harvested. Another factor that relates to timber harvest is the owners' affinity toward the land and trees. There are indicators that some owners do not harvest because they have strong attachments to their land. For example, the number of owners who oppose timber harvesting more than doubled between 1981 and 1994, to 28,108 owners. For many of the owners who oppose timber harvesting, the value of their timber goes beyond income.

Owners having similar reasons for owning timberland sometimes have differing attitudes toward timber harvesting. For instance, more than 2,000 owners controlling 364,937 acres (an average of 166 acres) indicated they harvested timber to improve wildlife habitat. Most of that land was concentrated in the Northern LP Unit where many clubs and associations hold land for hunting. Many owners are absentee owners—they do not reside on the land. Because harvesting improves browse conditions, some owners occasionally welcome the opportunity to cut timber. Then again, another 15,000 owners controlling 560,275 acres (or an average of 38 acres) did not harvest timber because they thought that if they removed trees they would be destroying opportunities for hunting. Apparently, they want to protect and perpetuate habitat for specific wildlife species.

Harvesters and owners who did not harvest indicated that the benefits received from owning timberland were similar (table 35). Harvest history does not appear to be related to the benefits received, especially with regard to recreation or esthetic enjoyment. A greater proportion of owners who did not harvest tend to view land value increase as more important than do those who harvested timber. Also, expected benefits from owning timberland paralleled benefits received (table 36).

Harvesters were more likely to request information about managing timberland than nonharvesters (table 37). Twenty-five percent of the harvesters requested assistance, whereas only 9 percent of the nonharvesters did so. Of those who requested management assistance, harvesters own an average of 99 acres of timberland and nonharvesters own an average of 44 acres of timberland.

RECREATIONAL USE OF PRIVATE TIMBERLAND

Recreational Use and Availability

An estimated 55 percent of the private timberland owners, holding 75 percent of the timberland acreage, reported some recreational use of their land (table 38). Ten percent of the owners, holding 28 percent of the timberland, indicate that the public is permitted to use their land. Interestingly, when compared to the 1981 Michigan landowner study (Carpenter and Hansen 1985), there is a decrease in owners who report recreational use on their timberland. There are plausible reasons for the decrease. Paramount is that timberland owners on average are older and are less likely to participate in outdoor recreational activities. Indicative of the consequence of aging on recreation participation is the increase between studies in the percentage of owners who do not participate in, or permit recreational use, from 10 percent in 1981 to 27 percent in 1994.

Half of the private timberland owners personally use their land for recreation, or have family or close friends that do (table 39). Hunting is the most popular recreation activity, reported by an estimated 38 percent of the

ownership units that control 45 percent of the private timberland acreage. Hiking is also a popular recreation activity. Hiking by the owner, or owner's friends, occurs on 29 percent of the ownerships, holding 33 percent of the private timberland. Bird watching is another popular form of forest recreation. Twenty-five percent of the owners holding 25 percent of the private timberland acreage bird watch or allow their friends on their land to bird watch. Picnicking, camping, snowmobiling, and winter sports are all important recreational activities engaged in by owners, their family, and friends, on the owners' timberland. More than 15 percent of the timberland is owned by people who use a portion of their timberland for these purposes. Of course, some owners and friends participated in multiple activities on the same acreage.

Only 10 percent of the owners, controlling 28 percent of the private timberland acreage, allow the public to use a portion of their timberland for recreation (table 40). Hunting is allowed by 4 percent of the owners who hold 16 percent (1,975,769 acres) of the private timberland acreage. Although few owners allow the public to recreate on their land, more than a million acres is owned by individuals or other owners who allow hunting, fishing, and snowmobiling on their land. An estimated 45 percent of the owners, holding 47 percent of the private timberland acreage, do not allow public use. An additional 45 percent of the owners with 25 percent of the acres did not indicate whether they allow public use or not.

The more timberland owned, the more likely the owner is to permit public use of the land (table 41). For instance, only 6 percent of the owners who hold between 1 and 19 acres allow the public to recreate on their land. This is probably due to the small size of the property, much of which is associated with a residence or is part of the farm. Conversely, 45 percent of the owners holding 500 or more acres permit public use on a portion of their property. In Michigan, a relatively small number of owners holding large tracts of timberland allow public access. These ownerships include most of the large corporate owners.

The different types of recreation that take place on private timberland indicate how diverse recreational opportunities are on Michigan's private timberlands. Many of the activities take place on the same land. However, more acreage is used for hunting than for other activities. Seventy percent of private timberland acreage (8,473,298 acres) held by 47 percent of the owners is used for hunting. However, on most land where hunting occurs, the public is not allowed to hunt (table 42). Only 8 percent of the owners, controlling 3,050,105 acres of timberland (25 percent of the private timberland area), allow others to hunt on the land they own. Thirty-nine percent of the owners, controlling 45 percent of the timberland, hunt but do not allow the public to hunt on the land they own.

Restricting Access by Posting

Forty-six percent of the owners holding 54 percent of the private timberland acreage indicated they post their land against public entry (table 43). The percentage of owners posting their land increased significantly between landowner studies in Michigan, climbing from an estimated 29 percent of owners in 1981 (Carpenter and Hansen 1985) to nearly half of all owners (46 percent) in 1994. Posting by landowners increased throughout the State. However, the percentage of timberland area that is posted is higher in the more populated Lower Peninsula than in the Upper Peninsula (table 43). In the Northern LP Unit, owners of 77 percent of the timberland indicated they post their land; in the Southern LP Unit, owners of 65 percent of the timberland acreage said they posted. The high proportion of land posted in the Lower Peninsula is reflective of the land use activities and population expansion. We suspect that in the Northern LP Unit, where owners post nearly 8 of every 10 acres of timberland, the concentration of association and club ownerships, and the high number of absentee ownerships have led to increased posting. In the Southern LP Unit, increased population pressures and the expansion of suburbia into rural areas contribute to increased posting. In the more rural and remote Eastern UP and Western UP Units, much less than half the timberland is posted. This region of Michigan contains the larger ownerships and most of the forest industry ownerships. It is apparent that in the Upper Peninsula, forest industry ownerships, holding large tracts of timberland, allow public use of their land.

Eighty-three percent of the owners who hold 500 acres or more of timberland reported that they post their land (table 44). However, those owners hold only 26 percent of the land in that class. Conversely, 15 percent of the owners in this size class, controlling 53 percent of the acreage, do not post their land. In general, the small timberland holders (owners of between 1 and 9 acres) and the large timberland holders (owners of more than 500 acres) post less of their land than do owners holding between 10 and 500 acres.

Reasons for Posting Timberland

The most common reason owners post their land is to prohibit access—20 percent of the owners with 25 percent of the timberland post for that reason (table 45). Another important reason for posting is to control hunting. Nine percent of the owners with 10 percent of the land post to control hunting. Earlier we pointed out that 10 percent of the timberland owners allow the public to use their land. But, some owners who allow public use also post their land, which suggests that just because land is posted does not mean it is unavailable for public use. Among the owners who permit public use of their land, 53 percent (18,244 ownerships) also post their land. The most common reason for those owners posting their land is to control hunting, prohibit access, and prevent recurrence of past property abuse. For owners who allow use, posting probably is used to screen potential users of the land and to establish a sense of responsibility on the part of the land user.

SUMMARY AND CONCLUSIONS

Small-tract owners predominate in Michigan, but size of holdings varies geographically with larger holdings found in the Upper Peninsula. Most private timberland owners are long-term owners who acquired their timberland before 1980. Some, however, have been active in the land market; of those, more acquired additional timberland than disposed of timberland. Most owners have only one tract of timberland. However, more than half of the State's private timberland is held by owners who own more than one tract of timberland. Owners of multiple tracts tend to hold land in the Upper Peninsula. Much of the private timberland in Michigan is held simply because it is part of a farm or residence, especially in the Lower Peninsula. However, in the less populated, rural areas of the State, nonresident owners are more prevalent. For instance, in the Northern LP Unit, which is mostly rural but is relatively close to the State's population centers, nonresident owners hold approximately one-fourth of the private timberland area.

Timberland is held in different forms of ownership, with individual owners predominating. Retirees are a large and growing segment of the ownership base—nearly one-third of all owners are retired. Corporate and other organizational forms of ownership tend to have their timberland in the northern reaches of the State, and on average their holdings are larger. Most owners are long-term holders of timberland; corporate and other group ownerships hold timberland longer than individual owners.

Many owners say that recreation or esthetic enjoyment is the reason they own timberland—and they expect it to remain an important reason for owning timberland. Most owners indicated that timber production is not an important reason for owning timberland. However, many have harvested timber. Most owners recognize that their timber can be a source of income, and some may view it as an emergency bank account that can be drawn upon when needed. Those who harvested timber tend to be older, and their advanced age has implications for long-term forest management. If they have not already done so, many older owners will probably harvest timber in the near future. When they harvest timber, if they do not invest in forestry through tree planting or site preparation for regeneration, some timberland may go unmanaged for future timber crops for a period of time.

Generally, smaller tract owners are less likely to harvest timber, but many indicated they planned to harvest timber. However, some of the timber removed will probably be for the owner's personal use. Many smaller tract owners have little knowledge of technical forest management, and few seek assistance or advice in managing their timberland. If they seek advice or assistance, many do only when they are virtually forced to make decisions about removal of mature timber. In the past, significant acres of timber have been harvested without the owner seeking professional assistance or advice. And, this may continue because many owners do not know who to contact for technical assistance or advice.

About a third of the nonforest industry timberland owners in Michigan have no intention of ever harvesting timber. However, they hold only 15 percent of the private nonforest industry timberland, and their holdings average only 15 acres. The average holding size of those who plan to harvest is almost three times that of those who say they will never harvest. In many instances, harvesting smaller tracts is not economically feasible, except for the removal of mature high-quality saw logs, especially in the Lower Peninsula.

Owners holding about a fourth of the State's private timberland did not know about sources that could provide forest management assistance. Generally, they were small-tract owners. Economies of scale make forest management more difficult for small landowners. Owners who requested forest management assistance in the past have larger tracts of land. When it comes to providing assistance or incentive programs for forest management, especially timber production, resources should probably be directed to larger tract owners—owners with 50 or more acres—because they are more likely to harvest timber. Providing individual assistance to many small-tract owners who are subjected to diseconomies associated with harvesting small tracts may not be a productive use of limited funds and resources. However, to permit assistance to small landholders, public agencies and the forest products industry should encourage and promote cooperative, integrated forestry management among smaller tract holders.

An obviously important concern for timber supply is fragmentation of timberland into smaller tracts. Our findings, when compared with findings from the 1981 study (Carpenter and Hansen 1985), suggest that between studies fragmentation of timberland in Michigan was not a significant statewide problem; on average, the size of nonindustrial holdings increased from 23 acres in 1981 to 29 acres in 1994, suggesting some consolidation of holdings. The number of long-term owners who acquired additional timberland was greater than the number who decreased their timberland holdings, further indicating that fragmentation may not be a significant problem at this time. Those who acquired additional timberland hold more land than those who got rid of timberland. Although fragmentation appears not to be a statewide problem, it probably occurs on a "local" level. However, fragmentation probably will accelerate, especially in the Lower Peninsula, if demand increases for recreation and forested home sites.

Recreational opportunities on timberland have long been important. Most owners hold timberland primarily for recreation or esthetic purposes. As owners age, however, fewer are actively participating in forest recreation. We suspect that esthetic enjoyment will become more important to older owners. Presently, only about 10 percent of the owners allow the general public assess to their land, and there is a trend toward increased posting. With the increased interest in recreation and esthetic enjoyment, will owners close more land to public use? This will likely become an issue of increasing public concern because private timberland is probably the greatest source of future recreational opportunities.

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APPENDIX

STUDY METHODS

The sampling scheme used in the survey of Michigan timberland owners was derived from the sampling design used in the Michigan forest resources inventory of 1994 (see Leatherberry and Spencer 1996). Sampling intensity was increased from a single intensity level to a triple intensity level in the Eastern and Western Upper Peninsula Units, increased from a single intensity level to a double intensity level in the Northern Lower Peninsula Unit, and kept at a single intensity level in the Southern Lower Peninsula Unit. The goal was to provide a sampling error of less than 10 percent for the total timberland by county in the units intensified. Such sampling was made possible through the cooperation, assistance, and additional funding provided by the State of Michigan, forest industries, and associations.

In this study, the owners surveyed were selected from a sample of randomly distributed points of timberland on aerial photographs of the entire State of Michigan. The exact ground location of selected timberland points on the aerial photographs was determined, and the owner of the land where the point occurred was identified from legal descriptions at county land departments or other reliable sources. A total of 6,203 timberland field plots were identified in Michigan. These were systematically distributed within each of the four survey units. The name and address of plot owners were arranged by unit and plot number, and recorded into a file of owners. Timberland plots that were publicly owned were removed from the file. The resulting file of owners served as the survey sample base. The file of private timberland owners, however, contained duplicate names and unusable addresses. As a result, it was necessary to define the survey sample base further. We identified all duplicate names and addresses. The first identified listing for an owner remained in the file and all other listings for the same owner were removed, leaving a single entity for multiple listings. Also, all addresses that were deemed unusable were removed. The final definition of the survey population included those 4,418 private timberland owners in Michigan, where a forest inventory plot was established on timberland they owned. From the list of owners, a continuous list of names and addresses was arranged by survey unit, and a systematic sample was selected. Our sampling interval was every other record and resulted in a survey base of 2,209 owners.

Each selected owner was mailed a questionnaire with an enclosed postage-paid, addressed return envelope. The questionnaire was developed from ownership studies done in the Northeastern States by Thomas Birch, and was revised to accommodate unique Michigan data requirements. A cover letter explaining the purpose of the study was mailed with the questionnaire to each selected owner; those who did not respond in approximately 3 weeks received a second letter and questionnaire. To check for nonresponse bias, a sample of owners who did not reply to the mail questionnaire was randomly selected from each unit to be

interviewed over the phone using a modified version of the mail questionnaire. Analysis of responses from the phone interviews did not reveal a nonrespondent bias, and those respondents are included in the final data tabulations.

After the initial mailing and one mail followup, 1180 questionnaires were returned. Of the returned questionnaires, 286 were not usable primarily because the owner had either moved and could not be located, died, sold the land, or returned the questionnaire without answers. These individuals were removed from the sample base. The 104 owners who agreed to the phone interview were found to be no different statistically in terms of social or demographic background from other respondents in the survey. Therefore, the information presented is based on the responses of 998 owners representing a 52-percent response rate when unusable replies are excluded. The findings from the sample population were statistically expanded to estimate the total population of private timberland owners and the acreage they own in Michigan. Responses to the questionnaire provided the basis of the estimates presented in this report. The design of the study is land oriented, and the probability that a particular forest ownership would be sampled depended on the rate of sampling and the acreage of timberland owned. As mentioned above, the survey units in Michigan had different rates of sampling. There were also different rates of response between large acreage owners and small acreage owners. Both the survey rate of sampling and the response rate affect the probability that an owner will be included in the final tabulations.

The total acreage of timberland in private ownership was obtained from the forest resources survey. The area of timberland in large acreage ownerships was then subtracted to form a separate stratum. The remaining private timberland area in each unit was divided by the number of small acreage field plots represented by the remaining valid questionnaires to determine the area represented by each plot.

Since the sampling scheme is area-based, there is a low probability of inclusion for owners of small parcels of timberland. To estimate the total number of ownership units in Michigan, it was necessary to weigh the number of ownership units obtained in the sample. The procedure can be stated as :

$$N = \frac{T_p}{N_r} \sum \frac{1}{A_i}$$

where:

N = estimated number of private ownership units in the sampling strata.
T_p = the acres of timberland in the sampling strata.
N_r = number or respondents in the sampling strata.
A_i = acres owned by individual respondents.

The N then equals the estimated number of private ownership units in the State or unit. This is an unbiased estimate of the total number of ownership units that own timberland in Michigan. Those owners having more than one survey plot on their land were sent only one questionnaire, and their response was weighed proportional to the acreage they own. The private timberland base and number of private timberland owners in each Forest Survey Unit in Michigan are shown below:

Unit	**All private ownerships**	
	(Acres)	(No.)
Eastern UP	2,074,600	32,853
Western UP	3,002,200	25,298
Northern LP	4,299,700	134,388
Southern LP	2,662,900	160,595
Total	12,039,400	353,135

Data were tabulated with the cooperation of the USDA Forest Service, Northeastern Forest Experiment Station's Forest Inventory and Analysis Unit, in Radnor, PA, under the direction of Thomas Birch.

SAMPLING ERRORS

It is important to have a measure of the variation associated with the estimate shown in the tabulations because every owner and every acre were not sampled. The data presented are estimates. A measure of the reliability of an estimate based on our sample is given by the sampling error. Sampling errors were calculated for the estimated number of timberland owners and acreage of forest land. Sampling errors appear in some tables of this report and are presented for each unit below.

The smaller the sampling error the greater the reliability of the estimate. A sampling error of 10 percent in a particular table entry means that 2 out of 3 times the true value for the population would lie within an interval constructed to represent a range of 90 to 110 percent of the value shown.

Because the ownership survey was conducted using a land-acre sample, the estimates of area have smaller errors than the estimate of number of owners. Estimates for the State as a whole are most reliable—they have the smallest sampling error—followed by the survey unit estimates.

The inclusion of small timberland holdings (those under 10 acres) in the study population increases the sampling error for the estimated number of owners.

The sampling errors (in percent) are:

Survey Unit	Estimates of acres of private timberland	Estimates of the number of owners of private timberland	Estimates of the number of owners holding 10 or more acres
Eastern UP	0.98	21.4	8.3
Western UP	0.67	13.6	8.8
Northern LP	0.60	12.6	5.8
Southern LP	1.37	12.1	7.6
All Survey Units	0.34	7.6	4.0

DEFINITION OF TERMS

Corporate.—Lands owned by a private corporation not in the business of operating primary wood-using plants.

Farm.—Any place from which $1,000 or more of agricultural products were produced and sold during the year.

Farmer-owned land.—Land owned by persons whose primary occupation is farming.

Forest industry land.—Land owned by companies or individuals operating primary wood-using plants.

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparing specified standards with basal area and/or number of trees, age or size, and spacing.) The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, or other bodies of water or clearings in forest areas shall be classed as forest if less than 120 feet wide.

Forest type.—A classification of forest land based on the species forming a plurality of live tree stocking. Major forest types in the State are: jack pine, red pine, white pine, balsam fir, white spruce, black spruce, northern white-cedar, tamarack, oak-hickory, elm-ash-soft maple, maple-beech-birch, aspen, paper birch, and balsam poplar.

Growing-stock tree.—A live tree of commercial species that meets specified standards of size, quality, and merchantability. (Note: Excludes rough, rotten, and dead trees.)

Individual private land.—Privately owned land held in individual or joint ownership.

Industrial wood.—All roundwood products except residential fuelwood.

Nonresident owner.—An owner whose primary residence is more than a mile from the nearest tract of timberland owned.

Other forest land.—Forest land not capable of producing 20 cubic feet per acre per year of industrial wood crops under natural conditions and not associated with urban or rural development. Many of these sites contain tree species that are not currently utilized for industrial wood production or trees of poor form, small size, or inferior quality that are unfit for most industrial products. Unproductivity may be the result of adverse site conditions such as sterile soil, dry climate, poor drainage, high elevation, and rockiness. This land is not withdrawn from timber utilization.

Owner tenure.—The length of time a property has been held by the owner.

Ownership size class.—The amount of timberland owned by one owner, regardless of the number of parcels.

Ownership unit.—All types of legal entities having ownership interest in land, regardless of the number of people involved. It is the focus of decisionmaking for each parcel, whether an individual (sole proprietor), group of individuals (partnerships or undivided estates), or legal person (corporation or trust).

Poletimber stand.—(See Stand-size class.)

Poletimber tree.—A live tree of commercial species at least 5.0 inches d.b.h. but smaller than sawtimber size.

Posted land.—Ownerships displaying signs indicating public trespass or admittance is not allowed.

Primary wood-using mills.—Mills receiving roundwood or chips from roundwood for processing into products.

Pulpwood.—Any log from which wood pulp is to be made; usually measured in bolts of 4 or 8 feet.

Private timberland.—All timberland other than that owned by Federal, State, or local governments or their agencies.

Public timberland.—
County and municipal land.—Land owned by counties and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.
Miscellaneous Federal land.—Federal land other than National Forest and land administered by the Bureau of Land Management or Bureau of Indian Affairs.
National Forest land.—Federal land that has been legally designated as National Forest or purchase units, and other land administered by the USDA Forest Service.
State land.—Land owned by the State of Michigan or leased to it for 50 years or more.

Reserved forest land.—Forest land withdrawn from timber utilization through statute, administrative regulation, or designation.

Resident owner.—An owner whose primary residence is within a mile of the nearest tract of timberland owned.

Sapling.—A live tree 1.0 to 5.0 inches d.b.h.

Sapling-seedling stand.—(See Stand-size class.)

Sawtimber stand.—(See Stand-size class.)

Sawtimber tree.—A live tree of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9.0 inches d.b.h. Hardwoods must be at least 11.0 inches d.b.h.

Seedling.—A live tree less than 1.0 inch d.b.h. that is expected to survive. Only softwood seedlings more than 6 inches tall and hardwood seedlings more than 1 foot tall are counted.

Stand.—A group of trees on a minimum of 1 acre of forest land that is stocked by forest trees of any size.

Stand-size class.—A classification of stocked forest land based on the size class of live trees on the area; that is, sawtimber, poletimber, or seedlings and saplings.

Sawtimber stands.—Stands with half or more of live tree stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

Poletimber stands.—Stands with half or more of live tree stocking in poletimber and/or sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

Sapling-seedling stands.—Stands with more than half of the live tree stocking in saplings and/or seedlings.

Timberland.—Forest land that is producing, or is capable of producing, more than 20 cubic feet per acre per year of industrial wood crops under natural conditions, and is not withdrawn from timber utilization, and that is not associated with urban or rural development. Currently inaccessible and inoperable areas are included. (Timberland was formerly called commercial forest land.)

Urban and other areas.—Areas within the legal boundaries of cities and towns; suburban areas developed for residential, industrial, or recreational purposes; school yards; cemeteries; roads; railroads; airports; beaches; powerlines and other rights-of-way; or other nonforest land not included in any other specified land use class.

NC FOREST EXPERIMENT STATION
FOREST SERVICE
U.S. DEPT. OF AGRICULTURE

Form Approved
OMB No. 0596-0078
Expires: 6-30-95

State _____
County _____
Plot _____

NORTH CENTRAL WOODLAND OWNERSHIP STUDY

THIS SURVEY IS VOLUNTARY AND THERE ARE NO PENALTIES FOR REFUSING TO ANSWER ANY QUESTIONS. BECAUSE IT WOULD INVOLVE A TREMENDOUS COST TO THE TAXPAYERS WE ARE UNABLE TO CONTACT ALL WOODLAND OWNERS. THEREFORE, WE TAKE A SMALL BUT REPRESENTATIVE SAMPLE OF WOODLANDS, ONE OF WHICH HAPPENS TO BE YOURS. SINCE YOU REPRESENT HUNDREDS OF OTHER WOODLAND OWNERS, YOUR COOPERATION IS IMPORTANT TO MAKE THE SURVEY RESULTS COMPREHENSIVE, ACCURATE, AND TIMELY. THANK YOU.

Please complete the following questions. Where actual records are not available please use your best estimate. Please be assured your answers will be strictly confidential, only statistical tabulations will be published. If you do not now own woodland please answer question 1 and return the questionnaire.

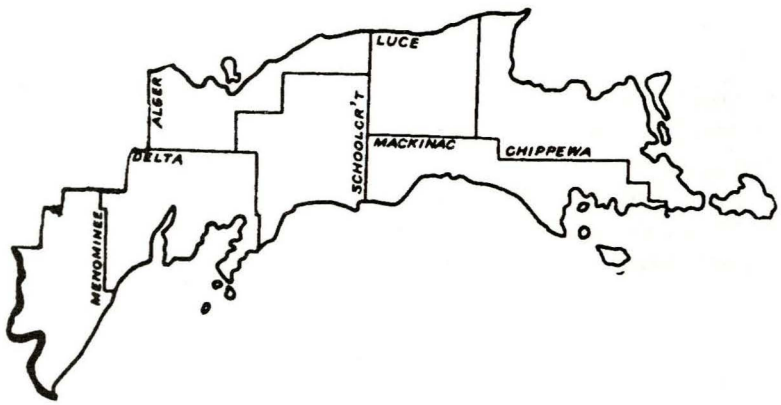
1. In what states do you own land?

State	Total acres	Acres* wooded

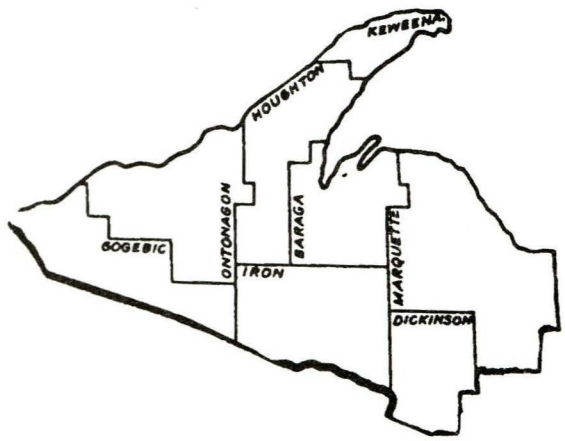
*Include idle fields and pastures with young trees.

2. Of your woodland in Michigan, how much is in each of the following areas?

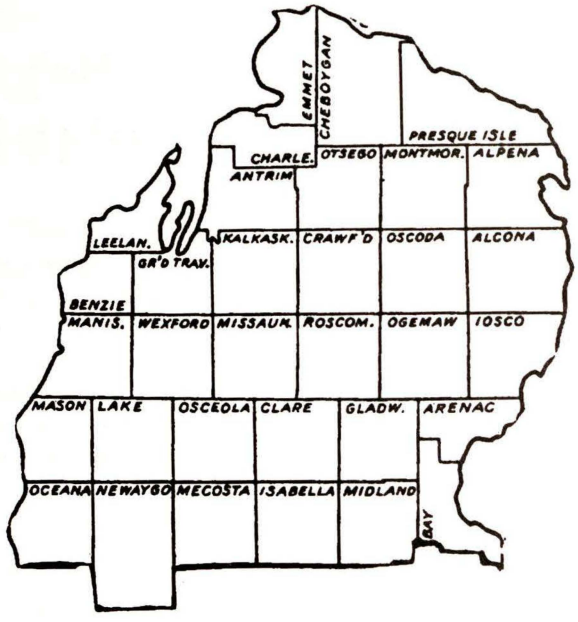
a. Eastern Upper Peninsula: Acres _____ or Percent _____



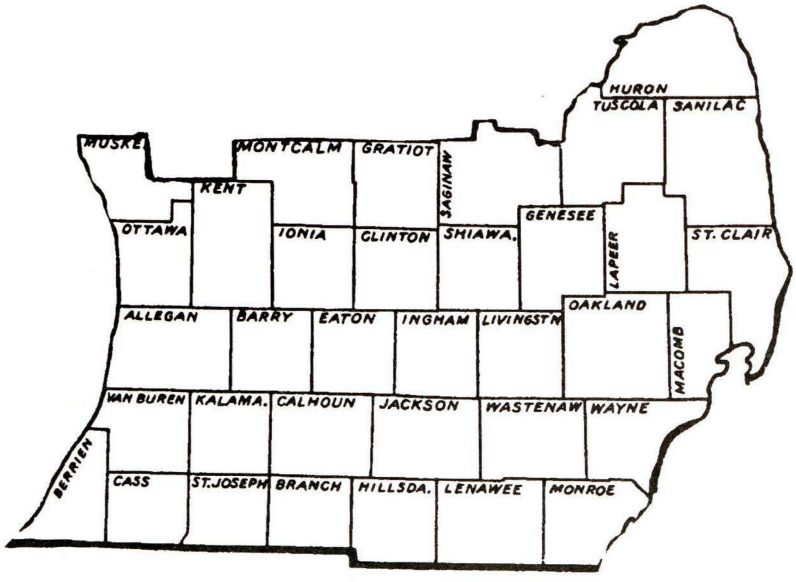
b. Western Upper Peninsula: Acres _____ or Percent _____



c. Northern Lower Peninsula: Acres _____ or Percent _____



d. Southern Lower Peninsula: Acres _____ or Percent _____



3. How many individual tracts or parcels of woodland do you now own?

Number _____

4. In what year did you first acquire woodland? (Whether or not you still own the first tract you acquired.) Year _____

How much woodland have you acquired in the last 15 years? Acres _____

How much woodland have you disposed of (sold or deeded to others) in the last 15 years? Acres _____

5. In which of the following ownership categories does the major portion of your woodland holding fall?

Check one

1._____ Individual (including joint husband wife and family ownerships other than family corporations)
2._____ Partnership
3._____ Corporate
4._____ Club or association
5._____ Other (please specify)_____

6. If your ownership is connected with a business or association, what is the nature of the organization?

Check one

1._____ Forest industry (sawmill, pulpmill, etc.)
2._____ Farm
3._____ Industrial business (manufacturing, mineral extraction, etc.)
4._____ Real estate
5._____ Non-industrial business (retail, sales, service industry, etc.)
6._____ Sport/recreation club or association
7._____ Public utility
8._____ Other (please specify)_____

7. What is the approximate road mileage from your primary residence to your nearest and farthest tract of woodland? (For businesses or organizations consider primary residence to mean nearest place of business.)

Miles to the nearest tract Miles _____
(Enter zero if you live on the tract.)
Miles to farthest tract Miles _____

8. Have you been approached to sell all or part of your woodland in the last five years? 1. All _____ 2. Part _____ 3. No _____

Have you been approached to sell trees in the last five years?
1. Yes _____ 2. No _____

9. Have trees been harvested from your land, either by you personally or by someone else, during the time you have owned your woodland?

Yes _____ Year of the most recent harvest _____

No _____ IF TREES HAVE NOT BEEN HARVESTED FROM YOUR LAND, SKIP TO QUESTION 17 ON PAGE 7.

10. During the last 15 years, in what years have trees been cut from your land either by yourself, or by someone else for your personal use (i.e. fuelwood, fence posts, etc.) or for wood industry use (sawlogs, pulpwood, etc.)? Please complete the following table. **Check as many as apply.**

Year	Personal use	Industry use	Both
All years			
1993-1994			
1991-1992			
1989-1990			
1987-1988			
1985-1986			
1983-1984			
1981-1982			
1979-1980			

11. During the cutting, what products were harvested?

Check as many as apply

1._____ Fuelwood for your own use or for the use of friends
2._____ Other products for personal use (fence posts, lumber, etc.)
3._____ Fuelwood for sale
4._____ Sawlogs for sale
5._____ Pulpwood for sale
6._____ Posts, poles and pilings for sale
7._____ Christmas trees for sale
8._____ Other products (please specify) _____
_____
9._____ Don't know what products were harvested

12. Before trees were cut from your land, did you have an opportunity to visit a logging operation? 1. Yes _____ 2. No _____

After the cutting, were you satisfied with the condition of the area? 1. Yes _____ 2. No _____

If you sold trees, were you satisfied with the price you received? 1. Yes _____ 2. No _____

13. For the harvests in the last 15 years or the most recent harvest before then, how were the trees chosen to be cut?

	Check as many as apply Cut for own use	Cut for wood using industry
Preselected marked trees were cut	1._____	1._____
Trees over a minimum diameter were cut	2._____	2._____
All or nearly all of the trees on a specified area were cut	3._____	3._____
Trees were cut to clear the land for another use	4._____	4._____
The logger selected the trees as he cut	5._____	5._____
Other (please specify)_____	6._____	6._____
Don't know what method was used to select the trees	7._____	7._____

14. For the harvests in the last 15 years or the most recent harvest before then, who was most responsible for determining which particular trees would be cut?

	Check as many as apply Timber for own use	Timber for wood using industry
Landowner	1._____	1._____
Forester	2._____	2._____
Friend or neighbor	3._____	3._____
Logger or timber buyer	4._____	4._____

15. Why were trees cut from your land? (Please rank as many as apply with number 1 the most important reason, number 2 the next most important reason and so on.)

Rank	
1._____	Felt trees were mature
2._____	Offered a good price
3._____	Land clearing
4._____	Needed money
5._____	Needed wood for own use
6._____	Trees harvested for company use (forest industry only)
7._____	Salvage of trees damaged by insects, disease, fire or weather
8._____	To improve wildlife habitat If so, what species_____
9._____	To improve the view or the scenic quality of the area
10._____	To improve recreation opportunities
11._____	Forest improvement--thinning, weeding, cull tree removal, etc.
12._____	To be eligible for preferential forest land tax treatment
13._____	Other (please specify)_____

16. Has the harvested area remained stocked with trees or been reforested?

1._____ Yes, include leaving site to reforest itself
2._____ No

If yes, what practices or methods were used to keep the area forested?

Check as many as apply

1._____ Left mature seed trees standing on the site
2._____ Prepared seed bed using heavy machinery
3._____ Controlled competing vegetation using fire or herbicide
4._____ Planted seedlings or dispersed seed by hand or mechanically
5._____ Made sure area was stocked with younger trees prior to harvest
6._____ Other reforestation method (please specify)_____
_____
7._____ No action taken, left area to reforest itself
8._____ Don't know

17. If trees have not been cut from your land, why not? (Please rank with number one the most important reason and number two the next most important reason and so on.)

Rank

1._____ No market or prices too low
2._____ Trees are too small
3._____ Trees are of too low quality
4._____ Scenery would be reduced
5._____ Value of the land for recreation or hunting would be reduced
6._____ Distrust of loggers
7._____ Opposed to or uninterested in cutting trees
8._____ Not enough volume to make harvesting worthwhile
9._____ Not enough area to make harvesting worthwhile
10._____ Insufficient knowledge of what trees to sell or how to sell
11._____ Another reason (please specify)_____

18. Do you plan to cut trees or harvest non-wood products (maple sap, Christmas trees, etc.) from your land for your personal use or for sale?

	Wood for own use (Check one)	**Wood for sale** (Check one)	**Non-wood products** (Check one)
In the next 10 years?	1._____	4._____	7._____
Possibly at some future date?	2._____	5._____	8._____
Never plan to harvest?	3._____	6._____	9._____

19. What percent, if any, of your woodland do you feel you would never cut trees from? Percent _____

Why would you not cut trees from this land? (Please rank with number one the most important reason and number two the next most important reason and so on.)

Rank	
1._____	No market or prices too low
2._____	Trees are too small
3._____	Trees are of too low quality
4._____	Scenery would be reduced
5._____	Value of the land for recreation or hunting would be reduced
6._____	Distrust of loggers
7._____	Opposed to or uninterested in cutting trees
8._____	Not enough volume to make harvesting worthwhile
9._____	Not enough area to make harvesting worthwhile
10._____	Insufficient knowledge of what trees to sell or how to sell
11._____	Another reason (please specify)_____

20. Have you ever sought advice or assistance in managing your woodland?

1. Yes_____ 2. No_____

(If you answered yes above, please check the kinds of help you sought.)

Check as many as apply

1._____	Information about forestry
2._____	Help with tree planting
3._____	Forest management assistance
4._____	Information about wildlife
5._____	Help in selling trees or other forest products
6._____	Help with insect or disease
7._____	Information about tax incentive programs
8._____	Information about forest recreation
9._____	Other (please specify)_____

21. What office, agency, or individual would you contact for forestry help or advice? (If you don't know, please check "Don't know.")

Check one

1._____	Private consulting forester or wildlife biologist
2._____	Industrial forester
3._____	State employee (forester or wildlife biologist)
4._____	Extension Service
5._____	Soil Conservation Service
6._____	Other (please specify)_____
7._____	Don't know

22. How did you become aware of the existence of technical forestry assistance?

Check as many as apply

1._____ Newspaper article
2._____ Magazine article
3._____ Radio
4._____ Television
5._____ State employee (forester or wildlife biologist)
6._____ Extension Service
7._____ A friend or neighbor
8._____ Other (please specify)_____
9._____ Don't know

23. Is there a written forestry or wildlife management plan for your property?

1. Yes_____ 2. No_____

If yes, who prepared the plan?

1._____ I prepared the plan
2._____ Other (please specify)_____

24. What types of forestry assistance would you be willing to pay for?

Please specify_____

25. Why do you own woodland? (Please rank with number 1 the most important, number 2 the next most important and so on.)

Rank

1._____ Land investment (hope to sell all or most of my woodland at a profit)
2._____ Recreation (hunting, camping, fishing, bird watching, etc.)
3._____ Timber production (growing timber or other forest products for sale)
4._____ Farm or domestic use (having the woods as a source of timber for my own use; e.g., firewood, fence posts, etc.)
5._____ Enjoyment of owning "green space"
6._____ Part of the farm (woodland is the untillable part of the farm and serves no useful function in the farm operation)
7._____ Woodland is part of my residence
8._____ For an estate to pass on to my children
9._____ Other (please specify)_____
_____

26. Which of the following do you feel were the most important benefits you derived from your woodland during the last 10 years? (Please rank these benefits in order of importance, with number 1 the most important.)

Rank	
1._____	Increase in land value (investment)
2._____	Recreation (hunting, camping, fishing, bird watching, etc.)
3._____	Timber production
4._____	Farm or domestic use
5._____	Enjoyment of woods, wildlife, and "green space"
6._____	Firewood
7._____	Other (please specify)_____
	_____

27. Which of the following do you feel will be the most important benefits you expect to derive from your woodland during the next 10 years? (Please rank these benefits in order of importance, with number 1 the most important.)

Rank	
1._____	Increase in land value (investment)
2._____	Recreation (hunting, camping, fishing, bird watching, etc.)
3._____	Timber production
4._____	Farm or domestic use
5._____	Enjoyment of woods, wildlife, and "green space"
6._____	Firewood
7._____	Other (please specify)_____
	_____

28. Does your woodland contain or is it adjacent to a:

Check all that apply	
1._____	Lake (10 acres or larger)
2._____	Stream or river
3._____	Wetland (swamp or marsh)
4._____	Pond (less than 10 acres)
5._____	Public road

29. Is your woodland used for recreational purposes?

1. Yes_____ 2. No_____

(If you answered yes above, indicate what activities are permitted and by whom.)

Check as many as apply		
Family, friends or employees only	General public	
1._____	1._____	Hiking
2._____	2._____	Picnicking
3._____	3._____	Camping
4._____	4._____	Hunting
5._____	5._____	Fishing
6._____	6._____	Snowmobiling and trail biking
7._____	7._____	Winter sports
8._____	8._____	Bird watching
9._____	9._____	Other (please specify)_____

30. Is your woodland posted?

1. Yes_____ 2. No_____

(If yes, what is the primary reason you posted?)

Check one

1._____ Past abuse of the property (littering, damage to fences, etc.)
2._____ To protect the safety of residents and property
3._____ To protect the owner from liability
4._____ To control hunting (I wish to know who is hunting on my land and/or when)
5._____ To prohibit hunting (I do not want any hunting on my land)
6._____ To control access (I wish to know who is on my land)
7._____ To prohibit access (I do not want uninvited persons on my land)
8._____ Other (please specify)_____

31. Do you or any member of your household subscribe to or receive any of the following periodicals?

Check as many as apply

1._____ American Forests
2._____ Audubon Magazine
3._____ Forest Farmer
4._____ Forests and People
5._____ Michigan Conservationist
6._____ Michigan Farmer
7._____ Michigan Forests
8._____ Michigan Natural Resources
9._____ Michigan Out of Doors
10._____ Outdoor Life
11._____ We don't receive any of the above magazines
12._____ Any other magazines similar to those listed above (please specify)_____

32. Please indicate, by circling the appropriate letter, whether you agree or disagree with each of the following statements made by other forest-land owners. If you feel you don't know, please circle the letter C "no opinion."

A. Strongly disagree
B. Disagree
C. No opinion
D. Agree
E. Strongly agree

1.	A	B	C	D	E	Protecting forests from fire, insects, and disease is a state forestry job.
2.	A	B	C	D	E	Management of forest land for wildlife and recreation reduces the value of the land for timber production.
3.	A	B	C	D	E	Lower taxes on forested land would not influence me to keep my land forested.
4.	A	B	C	D	E	The trees near my house are valuable for shade and to provide wildlife cover.
5.	A	B	C	D	E	I'm willing to pay for help to make better management decisions on my forest land.
6.	A	B	C	D	E	The country is being denuded. One must do something to preserve the forest land.
7.	A	B	C	D	E	Owners who manage their forest land should pay lower property taxes.
8.	A	B	C	D	E	More facilities that can use low grade or poor quality wood for energy are needed.
9.	A	B	C	D	E	I don't believe in wilderness areas; I believe in some form of productivity for all forest land.
10.	A	B	C	D	E	It doesn't make any difference whether I pay an annual tax on standing timber or a single tax when the timber is harvested.
11.	A	B	C	D	E	I purchased my forest land for investment to leave alone and sell later.
12.	A	B	C	D	E	To preserve the woods you have to cut periodically. We cut to maintain the natural productivity of the land.
13.	A	B	C	D	E	I would allow the public to use my land for recreation, including hunting, if my taxes were reduced for doing so.
14.	A	B	C	D	E	I like the beauty of the forest the most. We must preserve it, not damage it.
15.	A	B	C	D	E	It is getting harder and harder to find places to use for recreation; owning forest land insures we will have a place.

The following questions are asked to insure proper classification to questions 1 through 32 by categories such as age, sex, and education. If you need space to expand on any of your answers, use the space at the end of the questionnaire. Again, answers are strictly confidential and only statistical tabulations are published. No information that could identify you as an individual is ever published, or released.

THESE QUESTIONS DO NOT PERTAIN TO AND SHOULD NOT BE ANSWERED BY CORPORATIONS AND ORGANIZATIONS.

If the woodland is owned by more than one person, the following questions should be answered for the person to whom the questionnaire is addressed. If the questionnaire is addressed, to joint owners, as husband and wife, these questions should be answered by the person who makes most of the decisions.

33. During the first 12 years of the owner's life, where did he or she live most of the time:

Check one

1._____ In a city with a population of 100,000 or more
2._____ In a city with a population of 10,000 to 99,999
3._____ In a town with a population of fewer than 10,000
4._____ In a rural area
5._____ On a farm

34. What is the sex of the owner?

1. Male_____ 2. Female_____ 3. Joint Ownership_____

35. What is the age of the owner?

Check one

1._____ Under 25
2._____ 25-34
3._____ 35-44
4._____ 45-54
5._____ 55-64
6._____ 65 and over

36. How many years of formal education has the owner completed?

Check one

1._____ Grade 1-8
2._____ Some high school (9-11)
3._____ High school (12)
4._____ Some schooling beyond high school (12-15)
5._____ Undergraduate college degree (16)
6._____ Some graduate college work (16+)

37. What is the primary occupation of the owner?

_____

38. What is your best estimate of the total combined income of all members of the owner's household over 14 years of age during the past 12 months? (Please include NET income from businesses, farming, and rentals, money from jobs, pensions, dividends, interest, Social Security, unemployment, welfare, and workman's compensation.)

Check one

1._____ Less than $10,000
2._____ $10,000 to $19,999
3._____ $20,000 to $29,999
4._____ $30,000 to $39,999
5._____ $40,000 to $49,999
6._____ $50,000 to $59,999
7._____ $60,000 to $74,999
8._____ $74,000 to $99,999
9._____ Over $100,000

How many people in owner's household are over age 14?
Number_____

39. Which category below most closely describes the racial or ethnic origin of the owner?

Check one

1._____ White (not of Hispanic origin)
2._____ Black (not of Hispanic origin)
3._____ American Indian or Alaskan native
4._____ Hispanic
5._____ Asian or Pacific Islander

THANK YOU FOR TAKING THE TIME TO FILL OUT OUR QUESTIONNAIRE. YOUR COOPERATION IS GREATLY APPRECIATED. WOULD YOU LIKE TO BE SENT A COPY OF THE RESULTS OF THIS SURVEY? 1._____ Yes 2._____ No

Please feel free to write in any comments you have in the space below or on the next page.

Public reporting burden for this collection of information is estimated to average 15 minutes, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information including suggestions for reducing this burden to Department of Agriculture, Clearance Officer, OIRM, Room 404-W, Washington, DC 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB# 0596-0078), Washington, DC 20503.

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Ownership class	Eastern Upper Peninsula	Western Upper Peninsula	Northern Lower Peninsula	Southern Lower Peninsula	All units
Public					
National forest	763,900	863,400	900,900	14,200	2,542,400
Other federal	20,500	17,100	12,000	-	49,600
State	937,200	616,700	1,936,300	238,000	3,728,200
County and municipal	12,700	90,000	68,000	85,600	256,300
Total public	1,734,300	1,587,200	2,917,200	337,800	6,576,500
Private					
Total private	2,074,600	3,002,200	4,299,700	2,662,900	12,039,400
All ownerships	3,808,900	4,589,400	7,216,900	3,000,700	18,615,900

Table 2.--Estimated number of private owners and acres of timberland owned by size-class and Forest Survey Unit, Michigan, 1994

Size class of ownership (acres)	Eastern UP		Western UP		Northern LP		Southern LP		All units		Sampling error
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Percent
					Owners						
1-9	15,631	47	5,927	23	55,694	40	81,569	51	158,819	46	17
10-19	1,714	5	3,151	13	22,909	17	37,608	23	65,382	19	12
20-49	7,794	24	9,837	39	31,813	24	28,061	17	77,505	22	7
50-99	3,470	11	3,226	13	14,353	11	8,052	5	29,102	8	7
100-199	2,720	8	2,123	8	6,470	5	4,325	3	15,638	4	19
200-499	1,224	4	758	3	2,291	2	919	1	5,192	1	12
500-999	205	1	181	1	692	1	47	**	1,125	**	33
1,000-4,999	54	**	66	**	157	**	15	**	292	**	16
5,000+	41	**	29	**	9	-	-	-	80	**	40
Total	32,853	100	25,298	100	134,388	100	160,596	100	353,135	100	8
					Acres Owned						
1-9	46,892	2	29,226	1	179,156	4	413,494	16	668,768	6	14
10-19	23,446	1	43,840	2	278,686	6	529,272	20	875,244	7	12
20-49	273,536	13	299,572	10	945,543	22	793,908	29	2,312,559	19	7
50-99	234,460	11	233,812	8	955,496	23	529,271	20	1,953,039	16	8
100-199	351,689	17	263,038	9	756,434	18	215,017	8	1,586,179	13	9
200-499	281,352	14	219,199	7	607,138	14	132,318	5	1,240,006	10	10
500-999	125,045	6	102,293	3	218,967	5	33,080	1	479,385	4	15
1,000-4,999	78,153	4	116,906	4	228,921	5	16,540	1	440,520	4	16
5,000+	660,027	32	1,694,314	56	129,359	3	-	-	2,483,700	21	15
Total	2,074,600	100	3,002,200	100	4,299,700	100	2,662,900	100	12,039,400	100	.40

** Less than 0.5 percent.

Table 3.--Estimated number of private owners and acres of timberland owned by number of tracts and Forest Survey Unit, Michigan, 1994

Number of tracts	Eastern UP		Western UP		Northern LP		Southern LP		All units	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
1	25,649	78	21,113	84	98,980	74	122,259	76	268,001	76
2	5,099	16	1,799	7	23,641	17	27,442	17	57,981	16
3 or more	2,105	6	2,386	9	11,767	9	10,895	7	27,153	8
Total	32,853	100	25,298	100	134,388	100	160,596	100	353,135	100
					Acres Owned					
1	711,194	34	759,889	25	2,455,145	57	1,687,055	63	5,613,283	46
2	308,982	15	197,279	7	836,059	19	545,812	21	1,888,132	16
3 or more	1,054,424	51	2,045,032	68	1,008,496	24	430,033	16	4,537,985	38
Total	2,074,600	100	3,002,200	100	4,299,700	100	2,662,900	100	12,039,400	100

Table 4.--Estimated number of private owners and acres of timberland owned by distance from nearest forest tract and Forest Survey Unit, Michigan, 1994

Distance from residence (miles)	Eastern UP		Western UP		Northern LP		Southern LP		All units	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Less than 1	15,633	48	9,389	37	80,527	60	130,824	81	236,373	67
2-25	3,589	11	3,916	15	8,058	6	21,005	13	36,568	10
26-100	2,353	7	1,809	8	10,357	8	5,676	4	20,195	6
100+	10,667	32	7,629	30	27,329	20	1,310	1	46,935	13
No answer	611	2	2,555	10	8,117	6	1,781	1	13,064	4
Total	32,853	100	25,298	100	134,388	100	160,596	100	353,135	100
					Acres Owned					
Less than 1	574,072	28	1,085,208	36	1,962,992	46	1,984,770	75	5,607,042	47
2-25	651,878	31	762,151	25	604,872	14	363,876	14	2,382,777	20
26-100	140,676	7	192,286	7	447,889	10	198,476	7	979,327	8
100+	406,397	20	321,492	11	1,134,651	26	66,158	2	1,928,698	16
No answer	301,577	14	641,063	21	149,296	4	49,620	2	1,141,556	9
Total	2,074,600	100	3,002,200	100	4,299,700	100	2,662,900	100	12,039,400	100

Table 5.--Estimated number of private owners and acres of timberland owned by distance from residence and number of tracts, Michigan, 1994

Distance from residence (miles)	Owners of one tract		Owners of more than one tract Distance to: Nearest tract		Farthest tract	
	Number	Percent	Number	Percent	Number	Percent
			Owners			
Less than 1	180,346	67	56,027	66	22,853	27
2-25	24,105	9	12,463	15	29,167	34
26-100	14,837	5	5,358	6	7,622	9
100+	36,386	14	10,549	12	24,755	29
No answer	12,327	5	737	1	737	1
Total	268,001	100	85,134	100	85,134	100
			Acres			
Less than 1	2,768,246	49	2,838,796	44	825,858	13
2-25	696,165	12	1,686,612	26	1,369,645	21
26-100	597,760	11	381,567	6	1,300,031	20
100+	1,371,718	25	556,980	9	1,968,421	31
No answer	179,394	3	962,162	15	962,162	15
Total	5,613,283	100	6,426,117	100	6,426,117	100

Table 6.--Estimated number of private owners and acres of timberland owned by form of ownership and Forest Survey Unit, Michigan,1994

Form of ownership	Eastern UP		Western UP		Northern LP		Southern LP		All units	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Individual	31,491	96	24,029	94	126,271	94	152,867	96	334,658	95
Partnership	924	3	496	2	2,806	2	5,140	3	9,366	3
Corporation	149	**	168	1	913	1	2,344	1	3,574	1
Club/Assn.	263	1	452	2	4,264	3	245	**	5,224	1
Other	26	**	153	1	134	**	-	-	313	**
Total	32,853	100	25,298	100	134,388	100	160,596	100	353,135	100
					Acres Owned					
Individual	1,211,374	59	1,614,847	54	3,463,672	81	2,398,265	91	8,688,158	72
Partnership	371,915	18	249,024	8	258,780	6	115,778	4	995,497	8
Corporation	436,604	21	1,079,876	36	348,280	8	115,778	4	1,980,538	16
Club/Assn.	39,076	2	29,227	1	209,062	5	33,079	1	310,444	3
Other	15,631	**	29,226	1	19,906	**	-	-	64,763	1
Total	2,074,600	100	3,002,200	100	4,299,700	100	2,662,900	100	12,039,400	100

** Less than 0.5 percent.

Table 7.--Estimated number of farm and nonfarm owners and acres of timberland by form of ownership, Michigan, 1994

Form of ownership	Farm				Nonfarm				Total			
	Owners	Percent	Acres	Percent	Owners	Percent	Acres	Percent	Owners	Percent	Acres	Percent
Individual	92,813	99	1,945,373	94	241,845	94	6,742,785	68	334,658	95	8,688,158	72
Business and group ownership												
Partnership	602	1	85,876	4	8,764	3	909,621	9	9,366	3	995,497	8
Corporation	61	-	27,721	1	3,513	1	1,952,817	20	3,574	1	1,980,538	16
Clubs/Assn.	-	-	-	-	5,224	2	310,444	3	5,224	1	310,444	3
Other	50	-	15,122	1	263	-	49,641	-	313	-	64,763	1
Subtotal	713		128,719		17,764		3,222,523		18,477		3,351,242	
All owners	93,526	100	2,074,092	100	259,609	100	9,965,308	100	353,135	100	12,039,400	100

Table 8.--Estimated number of private owners and acres of timberland owned by occupation and Forest Survey Unit, Michigan, 1994

Occupation	Eastern UP		Western UP		Northern LP		Southern LP		All units	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Professional	4,848	15	1,814	7	9,828	7	21,194	13	37,684	11
Executive	471	1	3,811	15	12,608	9	8,046	5	24,936	7
Other white collar	329	1	1,871	7	5,962	4	15,141	9	23,303	6
Skilled trade	1,918	6	916	4	8,454	6	16,500	10	27,788	8
Other blue collar	1,752	5	1,154	4	11,997	9	23,480	15	38,383	11
Farmer	396	1	172	1	14,388	11	13,304	8	28,260	8
Service worker	195	1	228	1	2,071	2	3,581	2	6,075	2
Homemaker	4,022	12	438	2	2,529	2	3,835	2	10,824	3
Retired	16,922	52	11,302	45	53,882	41	30,768	20	112,874	32
Corporate; Partnership, etc.	1,362	4	1,269	5	8,117	6	7,729	5	18,477	5
No answer	638	2	2,323	9	4,552	3	17,018	11	24,531	7
Total	32,853	100	25,298	100	134,388	100	160,596	100	353,135	100
					Acres Owned					
Professional	179,752	9	138,826	4	398,123	9	215,017	8	931,718	8
Executive	85,969	4	153,439	5	378,217	9	248,096	9	865,721	7
Other white collar	39,077	2	80,373	3	159,249	4	165,398	6	444,097	4
Skilled trade	148,491	7	58,453	2	258,781	6	231,556	9	697,281	6
Other blue collar	132,861	6	51,146	2	278,686	7	264,636	10	727,329	6
Farmer	62,523	3	21,920	1	268,733	6	330,795	12	683,971	5
Service worker	7,815	**	14,613	**	49,765	1	82,699	3	154,892	1
Homemaker	31,261	1	21,920	1	99,531	2	66,159	3	218,871	2
Retired	468,919	23	482,237	16	1,363,572	32	678,130	26	2,992,858	25
Corporate; Partnership, etc.	863,225	42	1,387,353	46	836,028	19	264,636	10	3,351,242	28
No answer	54,707	3	591,920	20	209,015	5	115,778	4	971,420	8
Total	2,074,600	100	3,002,200	100	4,299,700	100	2,662,900	100	12,039,400	100

**Less than 0.5 percent.

Table 9.--Estimated number of private individual owners and acres of timberland owned by age class and Forest Survey Unit, Michigan, 1994

Age class (years)	Eastern UP		Western UP		Northern LP		Southern LP		All units	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
0-24	-	-	-	-	590	**	-	-	590	**
25-44	3,401	11	3,466	14	21,296	17	43,425	28	71,588	21
45-64	11,445	36	8,119	34	44,692	35	73,498	48	137,754	41
65+	16,156	51	12,271	51	58,508	46	31,565	21	118,500	35
No answer	489	2	173	1	1,185	1	4,379	3	6,226	2
Total	31,491	100	24,029	100	126,271	100	152,867	100	334,658	100
					Acres Owned					
0-24	-	-	-	-	19,906	1	-	-	19,906	**
25-44	218,829	18	175,359	11	477,748	14	545,812	23	1,417,748	16
45-64	515,811	43	518,770	32	1,602,446	46	1,108,164	46	3,745,191	44
65+	445,473	37	416,478	26	1,313,807	38	711,209	30	2,886,967	33
No answer	31,262	2	504,240	31	49,765	1	33,079	1	618,346	7
Total	1,211,375	100	1,614,847	100	3,463,672	100	2,398,264	100	8,688,158	100

** Less than 0.5 percent.

Table 10.--Estimated number of private individual owners and acres of timberland owned by annual income class and Forest Survey Unit, Michigan, 1994

Annual income	Eastern UP		Western UP		Northern LP		Southern LP		All units	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Under $19,999	8,468	27	8,396	35	30,772	24	25,306	17	72,942	22
20,000-39,999	4,183	13	2,403	10	28,258	22	42,349	28	77,193	23
40,000-59,999	6,457	20	3,678	15	17,191	14	22,170	14	49,496	15
60,000-74,999	1,739	6	1,073	4	8,482	7	9,074	6	20,368	6
75,000-99,999	1,413	4	594	3	4,488	4	6,640	4	13,135	4
100,000+	858	3	3,764	16	6,661	5	19,991	13	31,274	9
No answer	8,373	27	4,121	17	30,419	24	27,337	18	70,250	21
Total	31,491	100	24,029	100	126,271	100	152,867	100	334,658	100
					Acres Owned					
Under $19,999	242,275	20	204,586	13	537,466	15	347,335	14	1,331,662	15
20,000-39,999	273,536	23	233,812	15	826,106	24	678,130	28	2,011,584	23
40,000-59,999	203,198	17	197,278	12	597,185	17	380,414	16	1,378,075	16
60,000-74,999	93,784	8	87,680	5	308,546	9	215,017	9	705,027	8
75,000-99,999	39,076	3	65,760	4	169,202	5	132,319	6	406,357	5
100,000+	164,122	13	168,052	10	437,936	13	181,937	8	952,047	11
No answer	195,384	16	657,679	41	587,231	17	463,112	19	1,903,406	22
Total	1,211,375	100	1,614,847	100	3,463,672	100	2,398,264	100	8,688,158	100

Table 11.--Estimated number of private nonindustrial owners[1] by nature of business and form of owner, Michigan, 1994

Nature of business	Form of ownership										All businesses and groups	
	Partnerships		Corporations		Clubs/Assn.		Trusts		Other			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
						Owners						
Forest industry	74	1	81	2	-	-	-	-	-	-	155	1
Nonfarm	28	**	-	-	-	-	-	-	-	-	28	1
Unspecified	2,547	27	498	14	-	-	-	-	-	-	3,045	16
Industrial business	100	1	913	26	-	-	-	-	-	-	1,013	5
Land investment	4,906	53	1,499	42	-	-	-	-	-	-	6,405	35
Nonindustrial business	-	-	26	1	-	-	-	-	106	68	132	1
Sports/recreation club	1,109	12	155	4	5,224	100	-	-	-	-	6,488	35
Public utility	-	-	78	2	-	-	-	-	-	-	78	**
Other	-	-	263	7	-	-	157	100	-	-	420	2
Nonfarm subtotal	8,764	94	3,513	98	5,224	100	157	100	106	68	17,764	96
Farms	602	6	61	2	-	-	-	-	50	32	713	4
Total	9,366	100	3,574	100	5,224	100	157	100	156	100	18,477	100

[1] Does not include individual owners.

** Less than 0.5 percent.

Table 12.--Estimated acres of timberland in business or group ownerships by nature of business and form of ownership, Michigan, 1994

Nature of business	Form of ownership										All businesses and groups	
	Partnerships		Corporations		Clubs/Assn.		Trusts		Other			
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
						Acres Owned						
Forest industry	131,622	13	1,116,034	57	-	-	-	-	-	-	1,247,656	37
Nonfarm	7,815	1	-	-	-	-	-	-	-	-	7,815	**
Business unspecified	187,804	19	9,953	1	-	-	-	-	-	-	197,757	6
Industrial business	9,953	1	165,558	9	-	-	-	-	-	-	175,511	5
Land investment	355,872	35	281,215	14	-	-	-	-	-	-	637,087	19
Nonindustrial business	-	-	23,846	1	-	-	-	-	7,307	33	31,153	1
Sport/recreation	129,055	13	159,200	8	310,444	100	-	-	-	-	598,699	18
Public utility	-	-	69,308	3	-	-	-	-	-	-	69,308	2
Other	87,500	9	127,703	6	-	-	42,334	100	-	-	257,537	8
Nonfarm subtotal	909,621	91	1,952,817	99	310,444	100	42,334	100	7,307	33	3,222,523	96
Farms	85,876	9	27,721	1	-	-	-	-	15,122	67	128,719	4
Total	995,497	100	1,980,538	100	310,444	100	42,334	100	22,429	100	3,351,242	100

** Less than 0.5 percent.

Table 13.--Estimated number of private owners and acres of timberland owned by date of acquisition and form of ownership, Michigan, 1994

Year acquired	Individual		Corporate & other		All forms of ownership	
	Number	Percent	Number	Percent	Number	Percent
			Owners			
1990-1994	21,076	6	2,315	12	23,391	7
1980-1989	85,659	26	5,615	30	91,274	26
1970-1979	103,617	31	3,835	21	107,452	30
1960-1969	62,533	19	853	5	63,386	18
1950-1959	21,663	6	902	5	22,565	6
1940-1949	12,735	4	417	2	13,152	4
Prior to 1940	9,401	3	1,061	6	10,462	3
No answer	17,974	5	3,479	19	21,453	6
Total	334,658	100	18,477	100	353,135	100
			Acres Owned			
1990-1994	476,224	5	448,167	13	924,391	8
1980-1989	1,764,998	20	443,719	13	2,208,717	17
1970-1979	2,106,336	24	571,500	17	2,677,836	22
1960-1969	1,617,887	19	175,118	5	1,793,005	15
1950-1959	1,036,331	12	151,483	5	1,187,814	10
1940-1949	491,730	6	198,586	6	690,316	6
Prior to 1940	401,908	5	878,089	26	1,279,997	11
No answer	792,744	9	484,580	15	1,277,324	11
Total	8,688,158	100	3,351,242	100	12,039,400	100

Table 14.--Estimated number of private non-forest industry owners and acres of timberland owned by date of acquisition and Forest Survey Unit, Michigan, 1994

Year acquired	Eastern UP		Western UP		Northern LP		Southern LP		All Units	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
1990-1994	868	3	1,703	7	12,078	9	8,742	5	23,391	7
1980-1989	15,500	47	7,115	28	28,235	21	40,413	25	91,263	26
1970-1979	5,509	17	4,993	20	33,531	25	63,398	40	107,431	30
1960-1969	2,740	8	2,619	10	33,672	25	24,291	15	63,322	18
1950-1959	2,056	6	2,126	8	7,296	5	10,976	7	22,454	6
1940-1949	4,614	14	1,202	5	5,116	4	2,208	1	13,140	4
Prior to 1940	157	**	3,316	13	3,885	3	3,099	2	10,457	3
No answer	1,310	4	2,199	9	10,438	8	7,469	5	21,416	6
Total	32,754	100	25,273	100	134,251	100	160,596	100	352,874	100
					Acres Owned					
1990-1994	352,653	21	175,180	10	258,780	6	115,778	5	902,391	9
1980-1989	328,243	19	284,958	17	846,012	20	645,050	24	2,104,263	20
1970-1979	328,244	19	328,798	20	895,777	21	760,829	29	2,313,648	22
1960-1969	234,460	14	211,892	13	826,106	19	512,732	19	1,785,190	17
1950-1959	211,014	12	131,519	8	577,279	14	248,096	9	1,167,908	11
1940-1949	132,860	8	124,213	7	258,780	6	115,778	4	631,631	6
Prior to 1940	46,892	3	346,457	21	382,999	9	165,398	6	941,746	9
No answer	78,153	4	68,453	4	214,155	5	99,238	4	459,999	4
Total	1,712,519	100	1,671,470	100	4,259,888	100	2,662,899	100	10,306,776	98

** Less than 0.5 percent.

Table 15.--Estimated number of private owners and acres of timberland owned by primary and secondary reason for owning, Michigan, 1994

Reason for owning	Primary reason		Secondary reason	
	Number	Percent	Number	Percent
		Owners		
Land investment	18,556	5	10,804	4
Recreation	83,524	24	41,119	16
Timber production	2,111	1	4,863	2
Farm or domestic use	23,747	7	51,052	20
Esthetic enjoyment	58,318	16	68,429	27
Part of farm	54,951	16	8,578	3
Part of residence	66,111	19	32,274	12
Estate to pass on	9,988	2	36,863	14
Other	17,480	5	5,398	2
No answer	18,349	5	-	-
Total	353,135	100	259,380	100
		Acres Owned		
Land investment	725,673	6	606,823	7
Recreation	3,546,072	30	1,458,330	18
Timber production	2,498,530	21	563,708	7
Farm or domestic use	757,784	6	954,416	12
Esthetic enjoyment	1,291,607	11	2,155,978	27
Part of farm	743,143	6	316,226	4
Part of residence	1,229,407	10	704,262	9
Estate to pass on	379,464	3	878,835	11
Other	617,696	5	140,637	2
No answer	250,024	2	250,024	3
Total	12,039,400	100	8,029,239	100

Table 16.--Estimated number of private owners and acres of timberland owned by primary reason for owning and Forest Survey Unit, Michigan, 1994

Primary reason for owning	Eastern UP		Western UP		Northern LP		Southern LP		All owners	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Land investment	998	3	1,408	5	4,659	3	11,491	7	18,556	5
Recreation	11,975	36	8,278	33	31,237	23	32,034	20	83,524	24
Timber production	197	1	1,029	4	474	**	411	**	2,111	1
Farm or domestic use	1,608	5	1,227	5	5,568	4	15,344	10	23,747	7
Esthetic enjoyment	1,611	5	4,279	17	32,335	24	20,093	13	58,318	16
Part of farm	202	1	268	1	13,608	10	40,873	25	54,951	16
Part of residence	11,939	36	3,543	14	20,754	15	29,875	19	66,111	19
Estate to pass on	541	2	1,590	6	5,603	5	2,254	1	9,988	2
Other	1,583	5	1,007	4	12,865	10	2,025	1	17,480	5
No answer	2,199	6	2,669	11	7,285	5	6,196	4	18,349	5
Total	32,853	100	25,298	100	134,388	100	160,596	100	353,135	100
					Acres Owned					
Land investment	93,784	5	131,599	4	268,733	6	231,557	9	725,673	6
Recreation	640,856	31	460,317	15	1,866,008	44	578,891	22	3,546,072	30
Timber production	648,027	31	1,734,433	58	99,531	2	16,539	1	2,498,530	21
Farm or domestic use	140,676	7	80,373	3	288,639	7	248,096	9	757,784	6
Esthetic enjoyment	164,122	8	202,872	7	577,279	14	347,334	13	1,291,607	11
Part of farm	31,261	1	36,534	1	179,155	4	496,193	18	743,143	6
Part of residence	156,306	8	138,826	5	487,701	11	446,574	17	1,229,407	10
Estate to pass on	62,523	3	58,453	2	159,249	4	99,239	4	379,464	3
Other	105,784	5	122,260	4	273,874	6	115,778	4	617,696	5
No answer	31,261	1	36,533	1	99,531	2	82,699	3	250,024	2
Total	2,074,600	100	3,002,200	100	4,299,700	100	2,662,900	100	12,039,400	100

**Less than 0.5 percent.

Table 17.--Estimated number of private owners and acres of timberland owned by form of ownership and harvest history, Michigan, 1994

Form of ownership	Harvest history: Harvesters Number	Harvesters Percent	Sampling error Percent	Nonharvesters[1] Number	Nonharvesters[1] Percent	Sampling error Percent	Total Number	Total Percent	Sampling error Percent
				Owners					
Individual	162,538	96	8	172,120	94	15	334,658	95	8
Partnership	3,911	2	44	5,455	3	43	9,366	2	31
Corporation	1,532	1	55	2,042	1	67	3,574	1	45
Clubs/Assn.	1,519	1	30	3,705	2	90	5,224	1	64
Other	272	**	61	41	**	88	313	**	54
Total	169,772	100	8	183,363	100	14	353,135	100	8
				Acres Owned					
Individual	5,854,935	66	7	2,833,223	88	7	8,688,158	72	5
Partnership	804,732	9	33	190,765	6	25	995,497	8	27
Corporation	1,837,525	21	21	143,013	4	30	1,980,538	16	20
Clubs/Assn.	262,816	3	20	47,628	1	45	310,444	3	18
Other	50,150	1	42	14,613	1	74	64,763	1	37
Total	8,810,158	100	2	3,229,242	100	6	12,039,400	100	.40

[1] Also includes those who did not answer.

** Less than 0.5 percent.

Table 18.--Estimated number of private owners and acres of timberland owned by occupation and harvest history, Michigan, 1994

Occupation	Harvesters		Sampling error	Nonharvesters		Sampling error	All owners		Sampling error
	Harvest history								
	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent
	Owners								
Professional	8,243	5	21	29,441	16	57	37,684	11	45
Executive	10,517	6	29	14,419	8	30	24,936	7	21
Other white collar	12,311	7	42	10,992	6	32	23,303	6	27
Skilled trade	13,485	8	33	14,303	8	36	27,788	8	24
Other blue collar	16,375	10	32	22,008	12	28	38,383	11	21
Farmer	15,264	9	28	12,996	7	78	28,260	8	39
Service worker	3,940	2	40	2,135	1	61	6,075	2	34
Homemaker	8,484	5	51	2,340	1	72	10,824	3	43
Retired	59,481	35	11	53,393	29	26	112,874	32	13
Corporate; Partnership, etc.	7,234	4	27	11,243	6	38	18,477	5	25
No answer	14,438	9	41	10,093	6	45	24,531	7	30
Total	169,772	100	8	183,363	100	14	353,135	100	8
	Acres Owned								
Professional	550,517	6	14	381,201	12	17	931,718	8	11
Executive	532,852	6	15	332,869	10	19	865,721	7	12
Other white collar	242,717	3	22	201,380	6	25	444,097	4	16
Skilled trade	376,395	4	18	320,886	10	19	697,281	6	13
Other blue collar	398,227	5	17	329,102	10	19	727,329	6	13
Farmer	603,264	7	14	80,707	3	40	683,971	5	13
Service worker	104,553	1	35	50,339	2	53	154,892	1	29
Homemaker	177,765	2	25	41,106	1	54	218,871	2	23
Retired	2,122,981	24	8	869,877	27	12	2,992,858	25	7
Corporate; Partnership, etc.	2,955,223	34	14	396,019	12	17	3,351,242	28	12
No answer	745,664	8	54	225,756	7	22	971,420	8	40
Total	8,810,158	100	2	3,229,242	100	6	12,039,400	100	.40

**Less than 0.5 percent.

Table 19.--Estimated number of harvesters and acres of timberland harvested by date of most recent harvest and form of ownership, Michigan,1994

Date of harvest	Individual		All others		Total	
	Number	Percent	Number	Percent	Number	Percent
			Harvesters			
1990-1994	117,321	72	4,679	65	122,000	72
1980-1989	26,840	17	2,414	33	29,254	17
1970-1979	7,870	5	120	2	7,990	5
1960-1969	349	**	-	-	349	**
1950-1959	167	**	-	-	167	**
1901-1949	-	-	-	-	-	-
Prior to1901	-	-	-	-	-	-
No answer	9,991	6	21	**	10,012	6
Total	162,538	100	7,234	100	169,772	100
			Acres Owned			
1990-1994	4,438,530	76	2,743,324	93	7,181,854	82
1980-1989	861,298	15	175,454	6	1,036,752	12
1970-1979	171,579	3	26,493	1	198,072	2
1960-1969	17,260	**	-	-	17,260	**
1950-1959	25,584	**	-	-	25,584	**
1901-1949	-	-	-	-	-	-
Prior to1901	-	-	-	-	-	-
No answer	340,683	6	9,953	**	350,636	4
Total	5,854,934	100	2,955,224	100	8,810,158	100

** Less than 0.5 percent.

Table 20.--Estimated number of harvesters and acres of timberland owned by reason for harvesting and Forest Survey Unit, Michigan, 1994

Reason for harvesting	Eastern UP		Western UP		Northern LP		Southern LP		All units	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Harvesters					
Mature timber	4,491	30	2,659	23	14,210	23	19,344	23	40,704	24
Good price	336	2	26	**	1,791	3	-	-	2,153	1
Land clearing	596	4	13	**	1,680	3	11,613	14	13,902	8
Needed money	480	3	684	7	1,919	3	2,480	3	5,563	3
For own use	2,192	14	3,708	32	18,053	29	23,315	29	47,268	28
Timber salvage	562	4	148	1	5,910	10	1,766	2	8,386	5
Wildlife habitat	507	3	145	1	1,546	3	-	-	2,198	1
Improve rec./esthetics	101	1	209	2	916	2	-	-	1,226	1
Cultural treatment	716	5	1,061	9	2,880	5	3,224	4	7,881	5
Other	-	-	318	3	1,200	2	822	1	2,340	1
No reason given	5,171	34	2,562	22	10,463	17	19,955	24	38,151	23
Total	15,152	100	11,533	100	60,568	100	82,519	100	169,772	100
					Acres Owned					
Mature timber	343,874	21	357,538	14	954,777	31	496,193	29	2,152,382	24
Good price	54,077	3	434,458	17	109,484	4	-	-	598,019	7
Land clearing	39,076	2	7,307	**	79,625	3	115,778	7	241,786	3
Needed money	62,523	4	43,840	2	99,531	3	66,159	4	272,053	3
For own use	262,585	16	734,331	30	497,654	17	413,494	25	1,908,064	22
Timber salvage	78,153	5	29,226	1	209,015	7	49,619	3	366,013	4
Wildlife habitat	39,077	2	36,533	1	289,327	10	-	-	364,937	4
Improve rec./esthetics	15,631	1	7,307	**	29,859	1	-	-	52,797	1
Cultural treatment	368,284	24	292,117	12	238,874	8	115,778	7	1,015,053	11
Other	-	-	29,226	1	49,765	2	16,540	1	95,531	1
No reason given	365,847	22	562,693	22	418,029	14	396,954	24	1,743,523	20
Total	1,629,127	100	2,534,576	100	2,975,940	100	1,670,515	100	8,810,158	100

** Less than 0.5 percent.

Table 21.--Estimated number of harvesters and acres of timberland owned by reason for harvesting and form of ownership, Michigan, 1994

Reason for harvesting	Form of ownership											
	Forest industry		Farmer		Individual		Corporate		Other		All forms	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
						Harvesters						
Mature timber	94	36	15,348	35	23,355	20	957	70	950	19	40,704	24
Good price	2	1	954	2	1049	1	5	**	143	3	2,153	1
Land clearing	-	-	227	1	13,300	11	222	16	153	3	13,902	8
Needed money	-	-	2,579	6	2,860	2	99	7	25	**	5,563	3
For own use	45	17	14,190	33	30,863	26	12	1	2,158	43	47,268	28
Timber salvage	-	-	870	2	7,289	6	3	**	224	5	8,386	5
Wildlife habitat	-	-	284	1	1,683	1	43	3	188	4	2,198	1
Improve rec./esthetics	-	-	-	-	1,014	1	3	**	209	4	1,226	1
Cultural treatment	113	43	2,798	6	4,817	4	46	3	107	2	7,881	5
Other	-	-	-	-	2,340	2	-	-	-	-	2,340	1
No reason given	7	3	6,156	14	31,133	26	-	-	855	17	38,151	23
Total	261	100	43,406	100	119,703	100	1,390	100	5,012	100	169,772	100
						Acres Owned						
Mature timber	129,528	7	594,539	35	1,083,099	28	194,133	28	151,083	17	2,152,382	24
Good price	213,751	12	19,906	1	82,656	2	246,168	36	35,537	4	598,018	7
Land clearing	-	-	17,768	1	136,913	4	67,198	10	19,907	2	241,786	3
Needed money	-	-	97,123	6	155,023	4	9,953	1	9,953	1	272,052	3
For own use	531,759	31	399,537	24	776,587	20	53,807	8	146,373	16	1,908,063	22
Timber salvage	-	-	60,801	4	262,878	7	15,122	2	27,213	3	366,014	4
Wildlife habitat	-	-	37,675	2	143,879	4	50,406	7	132,977	15	364,937	4
Improve rec./esthetics	-	-	-	-	35,537	1	9,953	1	7,307	1	52,797	1
Cultural treatment	164,706	10	143,857	9	356,809	9	47,028	7	302,653	34	1,015,053	11
Other	-	-	-	-	95,532	3	-	-	-	-	95,532	1
No reason given	692,879	40	303,496	18	687,766	18	-	-	59,383	7	1,743,524	20
Total	1,732,623	100	1,674,702	100	3,816,679	100	693,768	100	892,386	100	8,810,158	100

** Less than 0.5 percent.

Table 22.--Estimated number of private owners on which products have been harvested and acres of timberland owned by timber products harvested and size class of ownership, Michigan, 1994 [1]

Timber product	Forest industry		Nonindustrial private owners							
			Ownership size class (acres)							
	all acres		1-49		50-499		500+		All harvesters	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Fuelwood personal	32	12	102,283	77	26,636	76	456	38	129,416	82
Fuelwood sale	107	41	7,008	5	3,558	10	498	41	11,171	7
Saw logs	261	100	35,525	27	16,990	48	923	77	53,699	32
Pulpwood	140	54	14,824	11	14,922	42	647	54	30,533	18
Other personal	8	3	22,797	17	8,162	23	246	20	31,213	18
Christmas trees	105	40	7,539	6	1,655	5	47	4	9,346	6
Other product sale	19	7	206	**	1,176	3	76	6	1,477	1
Don't know	-	-	693	1	117	**	13	1	823	**
All harvesters	261		133,033		35,275		1,203		169,772	
All owners	261		301,706		49,767		1,401		353,135	
					Acres Owned					
Fuelwood personal	261,264	15	1,614,432	76	2,490,527	72	733,362	48	5,099,748	58
Fuelwood sale	652,940	38	122,511	1	360,845	10	501,772	33	1,638,068	18
Saw logs	1,732,623	100	600,660	29	1,635,931	47	1,308,512	86	5,277,902	60
Pulpwood	1,702,764	98	290,752	14	1,576,292	45	1,367,631	90	4,937,596	56
Other personal	7,307	**	415,973	20	910,968	26	290,457	19	1,624,751	18
Christmas trees	365,653	21	115,924	6	214,233	6	82,628	5	778,471	9
Other product sale	149,160	9	7,815	**	127,302	4	420,965	28	705,255	8
Don't know	-	-	26,493	1	16,540	**	7,815	1	50,849	1
All harvesters	1,732,623		2,081,058		3,475,625		1,520,852		8,810,158	
All owners	1,732,623		3,856,571		4,761,456		1,688,750		12,039,400	

[1] Items do not add to total because some owners may have harvested more than one product.

** Less than 0.5 percent.

Table 23.--Estimated number of private owners that have had no harvest and acres of timberland owned by reason for not harvesting and Forest Survey Unit, Michigan, 1994

Reason for not harvesting	Eastern UP		Western UP		Northern LP		Southern LP		All nonharvesters	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Nonharvesters					
No market/price too low	-	-	37	**	547	1	-	-	584	**
Trees too small	868	5	919	7	534	1	5,229	7	7,550	4
Poor quality	65	**	963	7	1,076	1	-	-	2,104	1
Scenery reduced	1,822	10	3,925	28	10,552	14	1,397	2	17,696	10
Destroy hunting	1,231	7	1,260	9	4,201	6	7,991	10	14,683	8
Distrust loggers	316	2	77	**	264	**	658	**	1,315	1
Opposed to harvest	3,384	19	1,431	10	10,274	14	13,019	17	28,108	15
Low volume	324	2	-	-	14,177	20	22,240	29	36,741	20
Small area	3,908	22	-	-	191	**	5,023	6	9,122	5
Not enough knowledge	916	5	620	5	1,724	3	5,196	7	8,456	5
Other	480	3	975	8	5,790	8	1,753	2	8,998	5
No answer	4,387	25	3,558	26	24,490	32	15,571	20	48,006	26
Total	17,701	100	13,765	100	73,820	100	78,077	100	183,363	100
					Acres Owned					
No market/price too low	-	-	14,613	3	29,859	2	-	-	44,472	1
Trees too small	46,892	11	36,533	8	29,859	2	99,239	10	212,523	7
Poor quality	7,815	2	21,920	5	29,859	2	-	-	59,594	2
Scenery reduced	54,707	12	109,599	22	179,156	14	49,619	5	393,081	12
Destroy hunting	70,338	16	65,760	14	258,780	20	165,397	17	560,275	17
Distrust loggers	39,076	9	7,307	2	19,906	2	33,080	3	99,369	3
Opposed to harvest	93,784	19	58,453	13	308,546	22	231,556	24	692,339	21
Low volume	15,631	4	-	-	69,672	5	82,699	8	168,002	5
Small area	7,815	2	-	-	9,953	1	33,080	3	50,848	2
Not enough knowledge	31,261	7	29,226	6	49,765	4	99,238	10	209,490	7
Other	39,077	9	65,760	14	89,578	7	33,080	3	227,495	7
No answer	39,077	9	58,453	13	248,827	19	165,397	17	511,754	16
Total	445,473	100	467,624	100	1,323,760	100	992,385	100	3,229,242	100

** Less than 0.5 percent.

Table 24.--Estimated number of private owners that have had no harvest and acres of timberland owned by reason for not harvesting and form of ownership, Michigan, 1994

Reason for not harvesting	Forest industry		Farmer		Individual		Corporate		Other		All nonharvesters	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
						Nonharvesters						
No market/price too low	-	-	-	-	58	**	526	26	-	-	584	**
Trees too small	-	-	569	1	5,717	5	1,264	62	-	-	7,550	4
Poor quality	-	-	729	1	958	1	-	-	417	5	2,104	1
Scenery reduced	-	-	683	1	13,108	11	90	4	3,815	42	17,696	10
Destroy hunting	-	-	2,677	5	11,234	9	25	1	747	8	14,683	8
Distrust loggers	-	-	96	**	1,218	1	-	-	-	-	1,314	1
Opposed to harvest	-	-	5,460	11	18,903	15	83	4	3,662	40	28,108	15
Low volume	-	-	19,376	39	17,315	14	-	-	50	**	36,741	20
Small area	-	-	-	-	9,122	7	-	-	-	-	9,122	5
Not enough knowledge	-	-	3,346	7	4,854	4	-	-	255	3	8,455	5
Other	-	-	37	**	8,748	7	37	2	177	2	8,999	5
No answer	-	-	17,147	34	30,801	25	17	1	42	**	48,007	26
Total	-	-	50,120	100	122,036	100	2,042	100	9,165	100	183,363	100
						Acres Owned						
No market/price too low	-	-	-	-	24,566	1	19,905	14	-	-	44,471	1
Trees too small	-	-	40,386	10	155,597	6	16,540	12	-	-	212,523	7
Poor quality	-	-	17,768	4	14,613	1	-	-	27,213	11	59,594	2
Scenery reduced	-	-	34,308	9	321,607	13	17,260	12	19,906	8	393,081	12
Destroy hunting	-	-	50,848	13	437,953	18	16,540	12	54,934	22	560,275	17
Distrust loggers	-	-	15,122	4	84,247	4	-	-	-	-	99,369	3
Opposed to harvest	-	-	50,848	13	521,626	21	40,386	27	79,479	33	692,339	21
Low volume	-	-	59,572	15	98,476	4	-	-	9,954	4	168,002	5
Small area	-	-	-	-	50,848	2	-	-	-	-	50,848	2
Not enough knowledge	-	-	49,619	12	133,380	6	-	-	26,492	11	209,491	7
Other	-	-	7,307	2	177,852	7	22,430	16	19,906	8	227,495	7
No answer	-	-	73,612	18	420,374	17	9,953	7	7,815	3	511,754	16
Total	-	-	399,390	100	2,441,139	100	143,014	100	245,699	100	3,229,242	100

** Less than 0.5 percent.

Table 25.--Estimated number of private owners and acres of timberland owned by size class and expected time of future harvest and size class of ownership, Michigan, 1994

Expected time of future harvest	Ownership size class (acres)										Sampling error
	Forest industry all acres		1-49 acres		50-499 acres		500+ acres		Total acres		
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Percent
					Owners						
1-10 years	195	75	104,379	34	27,506	56	983	70	133,063	38	8
Indefinite	66	25	89,570	30	13,580	27	237	17	103,453	29	18
Never	-	-	97,168	32	7,450	15	157	11	104,775	30	18
No answer	-	-	10,589	4	1,231	2	24	2	11,844	3	49
Total	261	100	301,706	100	49,767	100	1,401	100	353,135	100	8
					Acres Owned						
1-10 years	1,626,345	94	1,876,124	48	2,645,782	56	1,362,760	81	7,511,011	62	3
Indefinite	106,278	6	1,066,996	28	1,344,066	28	205,785	12	2,723,125	23	7
Never	-	-	841,976	22	663,179	14	105,084	6	1,610,239	13	9
No answer	-	-	71,475	2	108,429	2	15,121	1	195,025	2	24
Total	1,732,623	100	3,856,571	100	4,761,456	100	1,688,750	100	12,039,400	100	.40

Table 26.--Estimated number of private owners and acres of timberland owned by primary reason for owning and expected time of future harvest, Michigan, 1994

Reason for owning	Expected time of future harvest									
	Next 10 years		Indefinite		Never		No answer		All owners	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Land value increase	17,784	13	15,647	15	16,194	15	798	7	50,423	14
Recreation	31,474	24	22,168	21	24,581	24	1,908	16	80,131	23
Timber production	6,837	5	2,448	2	-	-	-	-	9,285	3
Farm or domestic use	13,310	10	24,463	24	1,386	1	411	3	39,570	11
Esthetic enjoyment	44,768	34	28,337	27	39,522	38	352	3	112,979	32
Firewood	13,143	10	2,553	3	-	-	-	-	15,696	4
Other	1,055	1	1,645	2	13,336	13	-	-	16,036	5
No answer	4,692	3	6,192	6	9,756	9	8,375	71	29,015	8
Total	133,063	100	103,453	100	104,775	100	11,844	100	353,135	100
					Acres Owned					
Land investment	529,755	7	401,957	15	264,041	17	60,801	31	1,256,554	10
Recreation	1,788,658	24	939,106	34	545,960	34	19,906	10	3,293,630	27
Timber production	2,603,944	35	220,785	8	-	-	-	-	2,824,729	24
Farm of domestic use	417,305	5	201,800	7	54,214	3	16,540	9	689,859	6
Esthetic enjoyment	1,440,850	19	755,132	28	516,799	32	25,584	13	2,738,365	23
Firewood	385,454	5	46,275	2	-	-	-	-	431,729	4
Other	124,247	2	86,596	3	62,241	4	-	-	273,084	2
No answer	220,798	3	71,474	3	166,984	10	72,194	37	531,450	4
Total	7,511,011	100	2,723,125	100	1,610,239	100	195,025	100	12,039,400	100

Table 27.--Estimated number of non-forest industry owners and acres of timberland owned by ownership class and expected time of future harvest, Michigan, 1994

Ownership class	Expected time of future harvest								All individual owners	
	1-10 years		Indefinite		Never		No answer			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Farmers	37,960	28	36,844	36	17,824	17	898	8	93,526	27
Individual	87,157	66	64,521	62	79,115	76	10,946	92	241,739	68
Corporate (non-forest industry)	2,880	2	340	**	212	**	-	-	3,432	1
Other	4,871	4	1,682	2	7,624	7	-	-	14,177	4
Total	132,868	100	103,387	100	104,775	100	11,844	100	352,874	100
					Acres Owned					
Farmers	1,273,813	21	563,262	22	166,772	10	70,245	36	2,074,092	20
Individual	3,190,796	54	1,734,586	66	1,207,656	75	124,780	64	6,257,818	61
Corporate (non-forest industry)	620,855	11	139,793	5	76,134	5	-	-	836,782	8
Other	799,203	14	179,205	7	159,677	10	-	-	1,138,085	11
Total	5,884,667	100	2,616,846	100	1,610,239	100	195,025	100	10,306,777	100

Table 28.--Estimated number of private owners and acres of timberland owned by occupation and expected time of future harvest, Michigan, 1994

Occupation	Expected time of future harvest								All individual owners		Sampling error
	1-10 years		Indefinite		Never		No answer				
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Percent
					Owners						
Professional	14,947	11	19,474	19	3,068	3	195	2	37,684	10	45
Executive	8,585	7	6,154	6	10,197	10	-	-	24,936	7	21
Other white collar	8,464	6	13,334	13	1,381	1	124	1	23,303	7	27
Skilled trade	9,908	7	2,533	2	15,347	15	-	-	27,788	8	24
Other blue collar	13,776	10	14,900	14	9,707	9	-	-	38,383	11	21
Farmer	9,285	7	7,751	7	10,637	10	587	5	28,260	8	39
Service worker	4,673	4	1,203	1	199	**	-	-	6,075	2	34
Homemaker	790	1	5,673	5	4,361	4	-	-	10,824	3	43
Retired	41,588	31	28,271	26	32,312	32	10,703	90	112,874	32	13
Corporate; Partnership, etc.	8,152	6	2,490	2	7,835	7	-	-	18,477	5	25
No answer	12,895	10	1,670	5	9,731	9	235	2	24,531	7	30
Total	133,063	100	103,453	100	104,775	100	11,844	100	353,135	100	8
					Acres Owned						
Professional	580,761	8	229,841	8	113,301	7	7,815	4	931,718	8	11
Executive	452,967	6	195,112	7	217,642	14	-	-	865,721	7	12
Other white collar	211,440	3	170,925	6	51,779	3	9,953	5	444,097	4	16
Skilled trade	396,874	5	138,992	5	161,415	10	-	-	697,281	6	13
Other blue collar	388,994	5	215,802	8	122,533	8	-	-	727,329	6	13
Farmer	402,183	5	215,483	8	29,859	2	36,446	19	683,971	6	13
Service worker	110,632	1	34,307	1	9,953	1	-	-	154,892	1	29
Homemaker	62,750	1	131,046	5	25,075	2	-	-	218,871	2	23
Retired	1,516,604	20	827,966	31	540,368	33	107,920	55	2,992,858	25	7
Corporate; Partnership, etc.	2,638,587	36	476,844	18	235,811	14	-	-	3,351,242	27	12
No answer	749,219	10	86,807	3	102,503	6	32,891	17	971,420	8	40
Total	7,511,011	100	2,723,125	100	1,610,239	100	195,025	100	12,039,400	100	.40

**Less than 0.5 percent.

Table 29.--Estimated number of private owners and acres of timberland owned by size class of ownership and agency that owners would contact for forestry assistance, Michigan, 1994

Agency	Forest industry		Nonindustrial private owners							
			Ownership size class (acres)							
	all acres		1-49		50-499		500+		All owners	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Consultant forester	2	1	6,931	2	3,297	7	154	11	10,384	3
Industrial forester	17	7	1,832	1	1,269	3	70	5	3,188	1
State employee	1	**	16,438	5	6,405	13	211	15	23,055	7
Extension service	-	-	45,312	15	3,480	7	10	1	48,802	14
Soil Conservation Service	-	-	31,169	10	4,709	9	53	4	35,931	10
Other	2	1	5,205	2	1,498	3	3	**	6,708	2
Multiple sources	223	85	25,641	9	12,037	24	676	48	38,577	11
Don't know	-	-	135,206	45	14,474	29	143	10	149,823	42
No answer	16	6	33,972	11	2,598	5	81	6	36,667	10
Total	261	100	301,706	100	49,767	100	1,401	100	353,135	100
					Acres Owned					
Consultant forester	7,815	**	142,104	4	409,448	9	404,059	24	963,426	8
Industrial forester	22,853	1	42,335	1	137,975	3	83,949	5	287,112	2
State employee	94,500	5	313,791	8	581,221	12	195,192	12	1,184,704	10
Extension service	-	-	480,817	12	355,930	8	17,260	1	854,007	7
Soil Conservation Service	-	-	457,496	12	535,585	11	56,352	3	1,049,433	9
Other	221,151	13	134,413	3	142,315	3	7,307	**	505,186	4
Multiple sources	668,472	39	408,261	11	1,065,557	22	401,244	24	2,543,534	21
Don't know	-	-	1,453,185	38	1,293,733	27	118,577	7	2,865,495	24
No answer	717,832	41	424,169	11	239,692	5	404,810	24	1,786,503	15
Total	1,732,623	100	3,856,571	100	4,761,456	100	1,688,750	100	12,039,400	100

**Less than 0.5 percent.

Table 30.--Estimated number of private owners and acres of timberland by owners who have requested forest management assistance and size class of ownership, Michigan, 1994

Size class of ownership (acres)	All private owners		Owners that requested assistance		Percent of size class
	Number	Percent	Number	Percent	
			Owners		
Forest industry (all sizes)	261	**	80	**	31
Nonindustrial					
1-49	301,706	86	38,392	66	13
50-499	49,767	14	18,689	32	38
500+	1,401	**	1,117	2	80
Total	353,135	100	58,278	100	17
			Acres Owned		
Forest industry (all acres)	1,732,623	14	997,023	21	58
Nonindustrial					
1-49	3,856,571	32	697,740	14	18
50-499	4,761,456	40	2,115,457	43	44
500+	1,688,750	14	1,083,936	22	64
Total	12,039,400	100	4,894,156	100	41

** Less than 0.5 percent.

Table 31.--Estimated number of private owners and acres of timberland owned by request for forestry assistance and Forest Survey Unit, Michigan, 1994

Forestry assistance requested	Eastern UP		Western UP		Northern LP		Southern LP		All units	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Yes	5,984	18	4,477	18	20,203	15	27,614	17	58,278	16
No	26,336	80	18,112	72	106,602	79	130,621	81	281,671	80
No answer	533	2	2,709	10	7,583	6	2,361	2	13,186	4
Total	32,853	100	25,298	100	134,388	100	160,596	100	353,135	100
					Acres Owned					
Yes	688,166	33	1,686,717	56	1,791,524	42	727,749	27	4,894,156	41
No	859,685	42	708,743	24	2,408,646	56	1,868,992	70	5,846,066	48
No answer	526,749	25	606,740	20	99,530	2	66,159	3	1,299,178	11
Total	2,074,600	100	3,002,200	100	4,299,700	100	2,662,900	100	12,039,400	100

Table 32.--Estimated number of private owners and acres of timberland owned, by agency that owners would contact for forestry assistance, and decision to seek assistance, Michigan, 1994

Agency	Sought assistance		No assistance		No answer		All owners	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
				Owners				
Consultant forester	8,361	14	2,023	1	-	-	10,384	3
Industrial forester	1,315	2	1,873	1	-	-	3,188	1
State employee	5,004	9	17,927	6	124	1	23,055	7
Extension service	8,230	14	40,506	14	66	1	48,802	14
Soil Conservation Service	8,992	15	26,939	10	-	-	35,931	10
Other	1,903	3	4,805	2	-	-	6,708	2
Multiple sources	20,118	36	18,100	6	359	3	38,577	11
Don't know	4,278	7	145,492	52	53	**	149,823	42
No answer	77	**	24,006	8	12,584	95	36,667	10
Total	58,278	100	281,671	100	13,186	100	353,135	100
				Acres Owned				
Consultant forester	789,005	16	174,421	3	-	-	963,426	8
Industrial forester	182,028	4	105,084	2	-	-	287,112	2
State employee	584,995	12	589,756	10	9,953	1	1,184,704	10
Extension service	194,705	4	649,349	11	9,953	1	854,007	7
Soil Conservation Service	409,593	8	639,840	11	-	-	1,049,433	9
Other	366,621	7	138,565	2	-	-	505,186	4
Multiple sources	2,133,725	44	392,041	7	17,768	1	2,543,534	21
Don't know	226,178	5	2,632,011	45	7,307	**	2,865,496	24
No answer	7,306	**	524,999	9	1,254,197	97	1,786,502	15
Total	4,894,156	100	5,846,066	100	1,299,178	100	12,039,400	100

**Less than 0.5 percent.

Table 33.--Estimated number of private owners who have received forest assistance and acres of timberland owned by type of assistance, Michigan, 1994

Type of assistance	Owners assisted		Acres owned	
	Number	Percent	Number	Percent
Information about forestry	17,918	5	1,657,481	14
Help with tree planting	7,646	2	686,299	6
General forest management	26,620	8	2,860,220	24
Information about wildlife	12,815	4	1,761,627	15
Help with timber sales	16,157	5	1,329,150	11
Help with insect or diseases	9,593	3	872,682	7
Information on taxes	1,761	1	345,637	3
Information on forest recreation	1,444	**	229,320	2
Other	2,724	1	135,919	1
All types [1]	58,278	17	4,894,156	41
No assistance/no answer	294,857	83	7,145,244	59
Total	353,135	100	12,039,400	100

[1] Columns do not add to total because some owners have received more than one type of assistance.

Table 34.-- Estimated number of private owners and acres of timberland owned and primary reason for owning by harvesters and nonharvester, Michigan, 1994

Primary reason for owning	Owners		Acres owned	
	Number	Percent	Number	Percent
		Harvesters		
Land investment	5,806	3	412,537	5
Recreation	44,776	26	2,355,372	27
Timber production	1,589	1	2,491,224	27
Farm or domestic use	18,122	11	684,892	8
Esthetic enjoyment	28,018	18	704,228	8
Part of farm	19,208	11	579,737	7
Part of residence	36,210	21	813,731	9
Estate to pass on	4,933	3	239,860	3
Other	4,039	2	372,456	4
No answer	7,071	4	156,121	2
Total	169,772	100	8,810,158	100
		Nonharvesters		
Land investment	12,750	7	313,136	10
Recreation	38,748	21	1,190,700	37
Timber production	522	**	7,306	**
Farm or domestic use	5,625	3	72,892	2
Esthetic enjoyment	30,300	17	587,379	18
Part of farm	35,743	19	163,406	5
Part of residence	29,901	16	415,676	13
Estate to pass on	5,055	3	139,604	4
Other	13,441	7	245,240	8
No answer	11,278	6	93,903	3
Total	183,363	100	3,229,242	100
		All Owners		
Land investment	18,556	5	725,673	6
Recreation	83,524	24	3,546,072	30
Timber production	2,111	1	2,498,530	21
Farm or domestic use	23,747	7	757,784	6
Esthetic enjoyment	58,318	16	1,291,607	11
Part of farm	54,951	16	743,143	6
Part of residence	66,111	19	1,229,407	10
Estate to pass on	9,988	2	379,464	3
Other	17,480	5	617,696	5
No answer	18,349	5	250,024	2
Total	353,135	100	12,039,400	100

** Less than 0.5 percent.

Table 35.--Estimated number of private owners and acres of timberland owned by primary benefit received in the last 10 years and harvest history, Michigan, 1994

Primary benefit received	Harvest history					
	Harvest		Did not harvest		All owners	
	Number	Percent	Number	Percent	Number	Percent
			Owners			
Land value increase	8,726	5	15,832	9	24,558	7
Recreation	43,086	26	44,386	24	87,472	25
Timber income	5,716	3	-	-	5,716	2
Farm or domestic use	11,092	7	9,600	5	20,692	6
Esthetic enjoyment	64,944	38	63,180	34	128,124	36
Firewood	25,775	15	-	-	25,775	7
Other	1,901	1	15,812	9	17,713	5
No answer	8,532	5	34,553	19	43,085	12
Total	169,772	100	183,363	100	353,135	100
			Acres Owned			
Land value increase	537,257	6	307,096	10	844,353	7
Recreation	2,338,756	26	1,157,192	36	3,495,948	29
Timber income	2,697,551	31	-	-	2,697,551	23
Farm or domestic use	599,541	7	160,186	5	759,727	6
Esthetic enjoyment	1,605,847	18	1,197,692	37	2,803,539	23
Fuel wood	615,252	7	-	-	615,252	5
Other	185,711	2	164,868	5	350,579	3
No answer	230,243	3	242,208	7	472,451	4
Total	8,810,158	100	3,229,242	100	12,039,400	100

Table 36.--Estimated number of private owners and acres of timberland owned by primary benefit expected in the next 10 years and harvest history, Michigan, 1994

Primary benefit expected	Harvest history					
	Harvest		Did not harvest		All owners	
	Number	Percent	Number	Percent	Number	Percent
			Owners			
Land value increase	16,469	10	33,954	19	50,423	14
Recreation	39,297	23	40,833	22	80,130	23
Timber income	6,645	4	2,640	1	9,285	3
Farm or domestic use	18,186	11	21,384	12	39,570	11
Esthetic enjoyment	65,471	38	47,508	26	112,979	32
Firewood	13,230	8	2,466	1	15,696	4
Other	1,902	1	14,134	8	16,036	5
No answer	8,572	5	20,444	11	29,016	8
Total	169,772	100	183,363	100	353,135	100
			Acres Owned			
Land value increase	706,887	8	549,667	17	1,256,554	10
Recreation	2,263,734	26	1,029,896	32	3,293,630	27
Timber income	2,793,067	32	31,662	1	2,824,729	24
Farm or domestic use	572,706	6	117,153	4	689,859	6
Esthetic enjoyment	1,623,058	18	1,115,307	34	2,738,365	23
Firewood	398,650	5	33,079	1	431,729	4
Other	167,091	2	105,994	3	273,085	2
No answer	284,965	3	246,484	8	531,449	4
Total	8,810,158	100	3,229,242	100	12,039,400	100

Table 37.--Estimated number of private owners and acres of timberland owned by request for forest assistance and harvest history, Michigan, 1994

Forestry assistance requested	Harvester		Nonharvester		Total	
	Number	Percent	Number	Percent	Number	Percent
			Owners			
Yes	42,708	25	15,570	9	58,278	17
No	123,599	73	158,072	86	281,671	80
No answer	3,465	2	9,721	5	13,186	3
Total	169,772	100	183,363	100	353,135	100
			Acres Owned			
Yes	4,209,350	48	684,806	21	4,894,156	41
No	3,387,717	38	2,458,349	76	5,846,066	48
No answer	1,213,091	14	86,087	3	1,299,178	11
Total	8,810,158	100	3,229,242	100	12,039,400	100

Table 38.--Estimated number of private owners and acres of timberland owned by availability for recreation, Michigan, 1994

Recreation availability	Owners		Acres owned	
	Number	Percent	Number	Percent
Owner does not recreate but permits public use	14,757	4	1,974,329	16
Owner recreates and permits public use	19,768	6	1,401,113	12
Owners recreates and excludes public	157,253	45	5,715,253	47
Owner recreates and did not answer on availability	477	**	42,843	**
Subtotal recreation	192,255	55	9,133,538	75
Not used and not permitted	96,288	27	1,393,910	12
No answer	64,592	18	1,511,952	13
Total	353,135	100	12,039,400	100

** Less than 0.5 percent.

Table 39.--Estimated number of private owners and acres of timberland owned by type of recreational use by the owner, the owner's family, or immediate circle of friends, Michigan, 1994

Recreation by owners, family, and friends	Private owners		Acres owned	
	Number	Percent	Number	Percent
Hiking	102,121	29	3,941,521	33
Picnicking	51,461	15	1,969,307	16
Camping	54,787	16	2,390,530	20
Hunting	135,712	38	5,423,193	45
Fishing	33,478	9	1,891,432	16
Snowmobiling	57,008	16	2,619,444	22
Winter sports	60,428	17	2,470,116	21
Birdwatching	87,334	25	3,038,407	25
Other	11,153	3	497,063	4
All types[1]	177,021	50	7,116,365	59
No use indicated	176,114	50	4,923,035	41
Total	353,135	100	12,039,400	100

[1] Columns do not add to total because some owners report more than one type of use.

Table 40.--Estimated number of private owners and acres of timberland owned by type of public use permitted, Michigan, 1994

Type of public use permitted	Owners		Acres owned	
	Number	Percent	Number	Percent
Hiking	9,283	3	814,354	7
Picnicking	5,502	2	569,130	5
Camping	4,351	1	469,101	4
Hunting	14,729	4	1,975,769	16
Fishing	3,677	1	1,612,954	13
Snowmobiling	5,765	2	1,230,833	10
Winter sports	2,906	1	575,525	5
Birdwatching	6,239	2	659,353	5
Other	1,513	**	261,557	2
Some type of public use permitted[1]	34,525	10	3,375,442	28
Public use not permitted	157,253	45	5,715,253	47
No uses indicated	161,357	45	2,948,705	25
Total	353,135	100	12,039,400	100

[1] Columns do not add to total because some owners report more than one type of recreation.

** Less than 0.5 percent.

Table 41.--Estimated number of private owners and acres of timberland owned by availability for recreation and size class, Michigan, 1994

Availability for recreation	Size class of ownership (acres)											
	1-19		20-49		50-99		100-499		500+		All owners	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
						Owners						
Public permitted	13,897	6	11,136	14	4,961	17	3,861	19	670	45	34,525	10
No answer	210,304	94	66,369	86	24,141	83	16,969	81	827	55	318,610	90
Total	224,201	100	77,505	100	29,102	100	20,830	100	1,497	100	353,135	100
						Acres owned						
Public permitted	176,071	11	329,612	14	330,033	17	636,000	23	1,903,726	56	3,375,442	28
No answer	1,367,941	89	1,982,947	86	1,623,006	83	2,190,185	77	1,499,879	44	8,663,958	72
Total	1,544,012	100	2,312,559	100	1,953,039	100	2,826,185	100	3,403,605	100	12,039,400	100

Table 42.--Estimated number of private owners and acres of timberland owned by availability for hunting, Michigan, 1994

Hunting availability	Owners		Acres owned	
	Number	Percent	Number	Percent
Owner permits hunting and does not hunt	14,729	4	1,975,769	16
Owner hunts and permits hunting	14,913	4	1,074,336	9
Owner hunts and does not permit public to hunt	135,712	37	5,423,193	45
Subtotal	165,354	47	8,473,298	70
No answer	187,781	53	3,566,102	30
Total	353,135	100	12,039,400	100

Table 43.--Estimated number of private owners and acres of timberland owned by whether land is posted or not posted and Forest Survey Unit, Michigan, 1994

	Eastern UP		Western UP		Northern LP		Southern LP		All units	
Land posted	Number	Percent	Number	Percent	Number	Percent	Number	Posted	Number	Percent
					Owners					
Land posted	13,243	40	9,160	36	66,140	49	74,352	46	162,895	46
Land not posted	17,518	53	13,665	54	59,673	45	81,724	51	172,580	49
No answer	2,092	7	2,473	10	8,575	6	4,520	3	17,660	5
Total	32,853	100	25,298	100	134,388	100	160,596	100	353,135	100
					Acres Owned					
Land posted	762,271	37	629,443	21	3,319,157	77	1,720,134	65	6,431,005	54
Land not posted	1,055,896	51	1,861,130	62	890,965	21	909,686	34	4,717,677	39
No answer	256,433	12	511,627	17	89,578	2	33,080	1	890,718	7
Total	2,074,600	100	3,002,200	100	4,299,700	100	2,662,900	100	12,039,400	100

Table 44.--Estimated number of private owners and acres of timberland owned by size class and whether land is posted or not posted, Michigan, 1994

	Ownership Size Class (acres)									
	1-9		10-49		50-499		500+		Total	
Posting status	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
					Owners					
Land posted	39,138	25	87,681	61	34,831	70	1,245	83	162,895	46
Land not posted	104,215	65	54,050	38	14,093	28	222	15	172,580	49
No answer	15,466	10	1,156	1	1,008	2	30	2	17,660	5
Total	158,819	100	142,887	100	49,932	100	1,497	100	353,135	100
					Acres Owned					
Land posted	229,376	34	1,993,558	63	3,322,736	69	885,335	26	6,431,005	54
Land not posted	387,824	58	1,157,799	36	1,383,785	29	1,788,269	53	4,717,677	39
No answer	51,568	8	36,446	1	72,703	2	730,001	21	890,718	7
Total	668,768	100	3,187,803	100	4,779,224	100	3,403,605	100	12,039,400	100

Table 45.--Estimated number of private owners and acres of timberland owned by reason for posting and use permitted, Michigan, 1994

Reason for posting	Public permitted		No answer		Total	
	Number	Percent	Number	Percent	Number	Percent
			Owners			
Past abuse of property	3,322	10	8,080	3	11,402	3
Safety	610	2	6,348	2	6,958	2
Liability	1,100	3	6,772	2	7,872	2
Control hunting	4,759	14	25,939	8	30,698	9
Prohibit hunting	728	2	16,796	5	17,524	5
Control access	2,302	7	15,118	5	17,420	5
Prohibit access	5,032	14	64,720	20	69,752	20
Other	71	**	195	**	266	**
Reason not specified	320	1	683	**	1,003	**
Total posted	18,244	53	144,651	45	162,895	46
Land not posted	16,281	47	156,299	49	172,580	49
No answer	-	-	17,660	6	17,660	5
Total	34,525	100	318,610	100	353,135	100
			Acres Owned			
Past abuse of property	134,146	4	259,766	3	393,912	3
Safety	35,028	1	174,312	2	209,340	2
Liability	89,962	3	220,435	3	310,397	3
Control hunting	220,289	6	942,253	11	1,162,542	10
Prohibit hunting	68,319	2	339,856	4	408,175	3
Control access	162,041	5	699,857	8	861,898	7
Prohibit access	327,176	10	2,665,588	31	2,992,764	25
Other	14,613	**	15,122	**	29,735	**
Reason not specified	17,769	**	44,473	1	62,242	1
Total posted	1,069,343	32	5,361,662	62	6,431,005	54
Land not posted	2,284,099	67	2,433,578	28	4,717,677	39
No answer	22,000	1	868,718	10	890,718	7
Total	3,375,442	100	8,663,958	100	12,039,400	100

** Less than 0.5 percent.

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Identifies and profiles Michigan's private timberland owners. Estimates the number and distribution of private timberland owners by owner attitudes and objectives concerning forest ownership, management, and use. Provides 45 tables relating owner and property characteristics for the State and its four survey units.

KEY WORDS: Private landowner, owner objectives, owner attitudes, harvesting, forestry assistance, recreation.

Our job at the North Central Forest Experiment Station is discovering and creating new knowledge and technology in the field of natural resources and conveying this information to the people who can use it. As a new generation of forests emerges in our region, managers are confronted with two unique challenges: (1) Dealing with the great diversity in composition, quality, and ownership of the forests, and (2) Reconciling the conflicting demands of the people who use them. Helping the forest manager meet these challenges while protecting the environment is what research at North Central is all about.